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OF THE

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OF LONDON.

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PROCEEDINGS
OF THE
COMMITTEE OF SCIENCE AND CORRESPONDENCE
OF THE
ZOOLOGICAL SOCIETY OF LONDON.

November 9, 1830.

R. W. Hay, Esq. in the Chair.

The Chairman opened the business of the Meeting, by stating the objects contemplated by the Council in the formation of the Committee. He explained these objects in conformity with the subjoined Extracts from the Minutes and Report of the Council.

Extract from the Minutes of Council, July 21.

"On a consideration of the advantages likely to accrue to the Society, by cultivating an extensive correspondence on subjects of Natural History; it was Resolved, that a Committee be appointed, to be entitled 'The Committee of Science and Correspondence,' for the purpose of suggesting and discussing questions and experiments in animal physiology, of exchanging communications with the Corresponding Members of the Society, of promoting the importation of rare and useful Animals, and of receiving and preparing reports upon matters connected with Zoology.

"That the Committee be requested, in the first instance, to prepare a Report upon the Animals, for the importation of which it is most desirable that the Council should take measures, whether for purposes of utility or exhibition, under the heads of the several countries in which they are produced; and pointing out the means which should be taken for their preservation, either on the passage or after their arrival; and secondly, to obtain all information possible, upon the subject of the importation and breeding of Fish."

Oct. 6.

"It was ordered, that the Committee of Science, nominated at the Council of the 21st of July, should be requested to meet at the Society's rooms, at eight o'clock on Tuesday the 9th of November, and on every subsequent second and fourth Tuesday of the month. It was also Resolved, that the Committee should have power to add to their numbers; and that the members of the Council should be *ex officio* members of the Committee."

Extract from the Report of the Council, Nov. 4, 1830.

"It has been objected to the Council, that but little of their attention has been directed to the advancement of Zoological Science; and the apology which they have to offer is, that their time has been necessarily devoted to the very complicated and extensive arrangements under which the formation of their present establishments has been begun and accomplished. They have latterly been particularly anxious to place the responsibility of detail upon their salaried officers, so that their own time may be principally applied to more general superintendence, and particularly to the encouragement of scientific researches: they have, therefore, endeavoured to establish meetings of such members of the Society as have principally applied themselves to science; at which, communications upon Zoological subjects may be received and discussed, and occasional selections made for the purpose of publication. They propose from time to time to publish in the cheapest form an abstract from the most interesting of these communications; and they trust that the first of these papers will be ready for delivery on the first of January, 1831. They further propose, that these meetings shall take place on the second and fourth Tuesdays in every month; and they have invited, for the 9th of November next, such members of the Society as appeared likely, from their scientific pursuits, to take an interest in their views.

"The Council have moreover suggested that letters be sent to the superintendents of the principal Menageries in Europe, *viz.* at *Paris, Leyden, Munich, Vienna, Madrid,* &c. proposing mutual communication of all observations upon these matters, and an occasional interchange of such animals as may be most easily produced or imported in each country. They have also proposed, that circulars be addressed to the Corresponding Members of the Society, requesting particular information upon such facts of Natural History as it may be desirable to investigate at each place; and they further propose that a prize be offered for the Essay which shall contain the best and most extensive practical knowledge upon the importation and domestication of foreign animals in this and other countries."

The Chairman concluded his Address by calling on the Members, collectively and individually, to forward the views of the Council, by communicating such facts as might tend to the advancement of Zoological Science.

Mr. Vigors called the attention of the Committee to a Gallinaceous group of America, which supplied in that continent the place of the *Quails* of the Old World. Of this group, or the genus *Ortyx* of modern authors, which a few years back was known to ornithologists by two well-ascertained species only, he exhibited specimens of six species; namely, of *Ort. virginianus* and *californicus*, which had been the earliest described, the former by Linnæus, the latter by Dr. Latham; of *Ort. capistratus*, a species lately named and figured in Sir W. Jardine's and Mr. Selby's "Illustrations of Ornithology"; and of *Ort. Douglasii, Montezumæ*, and *squamatus*, which had been characterized by himself in the "Zoological Journal." In addition to these species he exhibited plates of three others of which he regretted that he could obtain no specimens in London; namely, of *Ort. macrourus*, figured by Sir W. Jardine and Mr. Selby; of *Ort. Sonninii*, figured by M. Temminck in the "Planches Coloriées" [No. 75.]; and of the *Ort. cristatus*, figured in the "Planches Enluminées" [No. 126.] of M. Buffon. To these nine described species, he added two others apparently new to science, and which he characterized under the names of *Ort. neoxenus* and *affinis*; stating at the same time his doubts whether both might not be the females or young males of the imperfectly known species *Ort. Sonninii* or *cristatus*.—The following are the specific characters of these birds.

Ortyx neoxenus. *Ort. brunneus, supra fusco rufoque undulatim variegatus, subtus pallido-rufo maculatus; genis lateribusque colli rufescentibus; caudâ brunneo-fusco rufoque undulatim fasciatâ; cristâ brevi brunneâ.*

Staturâ minor quàm *Ort. californicus.*

Ortyx affinis. *Ort. pallidè brunneus; dorso alisque fusco pallidoque rufo variegatis; caudâ pallescenti-brunneâ, fusco alboque undulatim fasciatâ; capite, collo, pectore, abdomineque rufescentibus, hoc albo guttato, illis albo nigroque variegatis; fronte apiceque cristæ elongatæ rufo-brunneæ albescentibus.*

Staturâ minor quàm species præcedens.

Mr. Vigors proceeded to state, that individuals of four of the above-mentioned species, namely, *Ort. virginianus, californicus, neoxenus* and *Montezumæ*, had been exhibited in a living state in the Gardens of the Society. Specimens of the former three, he added, were still alive there, having braved the severity of the last winter without any artificial warmth. They were all natives of the northern parts of America. The *Ort. virginianus*, he also mentioned, had bred in this country, and had even become naturalized in Suffolk.

He stated in addition, that Capt. P. P. King, R.N., had pointed out to him, amongst his collection lately brought home from the Straits of Magellan, specimens of a bird which he made no doubt was the same as the *Caille des Isles Malouines* of M. Buffon, figured in the "Planches Enluminées" [No. 222.], and which was subsequently named *Perdix Falklandica* by Dr. Latham. This bird has been added to the genus *Ortyx* by modern authors, but erroneously; as the structure of the wing, in which consists the chief difference between the *Ortyx* of America and the genus *Coturnix* or the *Quails* of the Old World, associates the Magellanic bird more closely with the latter group than with the birds of its own continent. Mr. Vigors mentioned, that the form which characterizes the true *Quails* extends to Australia, where several species are found. And referring to the deviation in form, which partially separates the South American bird from the allied groups of the same continent, and brings it in contact with those of Australia, and through them with those of the old continent, he dwelt upon the beautiful series of geographical affinity, which in this instance united the zoology of the southern extreme of the New World with that of the nearest portions of the southern hemisphere, in like manner as the zoology of the northern extreme is united with that of the neighbouring continents of Europe and Asia. He pointed out some additional instances, in which the same union might be traced.

Mr. Owen commenced the reading of a paper On the Anatomy of the *Orang Utan* (*Simia Satyrus*, L.).

The subject principally referred to was a young male, probably about four years of age, which had recently been presented to the Society by Mr. Swinton of Calcutta; it reached England in a very debilitated state, and died on the third day after its arrival in Bruton-street.

The morbid appearances met with in its examination were very slight, and of themselves not sufficient to account for the death of the animal. The brain was firm, and its membranes bore no traces of inflammation. The stomach and intestines were also equally free from morbid appearances. The liver was perfectly healthy, which was the more remarkable, as on the third day before death the *fæces* were clay-coloured from a deficiency of bile. The heart was healthy, except that it had two or three patches of organized lymph upon its surface, indicating old inflammation: the *pericardium* contained more than half an ounce of fluid: about four ounces of fluid were also effused in the cavity of the chest, and the cellular tissue of the lungs was gorged with *serum*, a circumstance which must have occasioned a great obstruction of the circulation. There existed before death evidence of this effusion, in the slow and laboured breathing of the animal, as noticed by Mr. Martin, who also states that the pulse was 100 and very feeble, but, as far as he observed, without intermission. No other organ exhibited any lesion of structure; the lungs and liver were free from tubercles, the development of which appears to be the most frequent cause of death in animals which, coming from warm countries, have sojourned in our damp climate. The effusion observed may probably be considered as one of the consequences of that debility and exhaustion of the system, produced by a long voyage, improper food, and *diarrhœa*, which terminated in premature death.

The general appearance and position of the abdominal *viscera* in the *Orang* bear much resemblance to those of the human subject. The stomach is thicker and narrower at its pyloric end, and the villous coat is of less extent. The small intestines are lined by a smooth and uniform membrane, and are without *valvulæ conniventes*. The position of the *cæcum* is the same as in man: to its extremity is attached the vermiform appendage, which is wider at its commencement; thus exhibiting as a permanent structure in the *Orang*, that which in man is a fœtal peculiarity. The *colon* is sacculated, and appears, from the existence of *glandulæ solitariæ* and from the presence of lacteal glands in the *meso-colon*, to take a great share in the functions of digestion. The liver generally resembles the human; the gall bladder is long and tortuous; the *pancreas* is relatively larger, and the spleen more pointed at its extremities than in man; the hepatic and pancreatic secretions enter the *duodenum* separately, but close together. In the structure of the abdominal ring, the *Orang* recedes further than the *Chimpanzee* (*Simia Troglodytes*, L.) from the human type; the kidneys also differ, and present, like those of the *Monkeys* generally, only a single *papilla*. The palate, unlike that of man and of the *Chimpanzee*, has no pendulous *uvula*.

In external form, the brain resembles the human and that of the *Chimpanzee*: it differs from the brains of other animals in the number and disposition of the *laminæ* of the *cerebellum*; in the posterior fissure of that part; and in wanting the transverse band of fibres posterior to the *pons Varolii*. As compared with that of the *Chimpanzee*, the *medulla oblongata* is shorter in proportion, as are also the anterior lobes; and the *cerebellum* projects further behind the *cerebrum*. The internal structure of the brain has not yet been examined; some previous preparation of that part having been deemed necessary, in order to render it sufficiently firm for dissection.

The structure of the *larynx* is minutely described, and contrasted with the anatomy of the same part in the *Chimpanzee*, in which the laryngeal sacs are not developed as in the *Orang*. The left laryngeal sac in the present instance was the largest, and extended over the top of the *sternum*. In the *Chimpanzee* the laryngeal sac is produced into a cavity in the body of the *os hyoïdes*, presenting the first indication of the excavation which is carried to so great an extent in the *Monkeys* of the genus *Mycetes*. The thyroid gland is small in the *Orang*. The lungs are entire on each side, and not divided into lobes. The *aorta* gives off by a common trunk the right subclavian and the right and the left carotid arteries, the latter of which is given off in the *Chimpanzee*, as in man, from the arch of the *aorta*.

In the course of his illustrations of the anatomical differences which exist between the *Orang* and the *Chimpanzee*, Mr. Owen frequently referred to Tyson's "Anatomy of a Pigmy," and confirmed many of the descriptions given in that work.

November 23, 1830.

Dr. Waring in the Chair.

The following letter from F. Jenkins, Esq., Secretary to the Physical Committee of the Asiatic Society, was read:

"Calcutta, 24th March 1830.

"Sir,—I am directed by the President of the Physical Committee of the Asiatic Society to present, in their name, to the Zoological Society, a small collection of Indian Birds, made (for our Society) by Capt. Franklin (one of its most zealous members) during a late geological tour.

"I am instructed at the same time to state, that it will afford pleasure to the Physical Committee of the Asiatic Society to promote as far as may be in their power, the views of the Zoological Society in this country; and they will be happy to receive communications of their wishes on the subject.

"The collection is in charge of Captain Franklin, who is proceeding in the ship Lady Nugent, to England. I am, &c. &c.

"*N. A. Vigors, Esq.* Sec. Z. S. "F. Jenkins."

The collection alluded to in the preceding letter was laid on the table. It was formed by Major Franklin, F.R.S. &c., on the banks of the Ganges, and in the mountain chain of Upper Hindoostan. It contained one hundred and seventy-one species, and was accompanied by drawings of each of the birds, made while they were recent. Mr. Vigors briefly remarked on several of them, as affording interesting illustrations of the extent of the geographical distribution of certain species. He declined to enter at any length into the subject, which he expected would be fully treated of by Major Franklin in a paper which that gentleman was preparing, and which would be communicated to the Committee at an early meeting.

Mr. T. Bell exhibited a pair of living *Acouchies*, (*Olive Cavy*, Penn., *Dasyprocta Acuschy*, Illig.) recently obtained by him from Guiana. Although they are abundant in their native country, he had never, before the arrival of these individuals, seen a specimen of the species, nor was he aware of the existence of even a preserved skin in any English collection. The *Acouchy* is readily distinguishable from the well-known *Agouti* by its smaller size, its lighter and more elegant proportions, its deeper colours, and other characters, which have been well pointed out by Barrère, Buffon, and other naturalists. The most marked difference is found in the tails of the two animals, that of the *Agouti* being little more than a tubercle, while the tail of the *Acouchy* is upwards of two inches in length; it is slender, and of equal diameter throughout its extent, and resembles a quill, or a portion of a tobacco-pipe. The animal frequently agitates this organ with a quick tremulous motion. Both the individuals are mild and gentle in their dispositions, but somewhat timid; they are, however, familiar with their master, and run to him whenever he enters the room in which they are kept, and about which they are allowed to range during the day. Their food is entirely vegetable; they are especially partial to nuts and almonds; they drink but little. They are extremely cleanly, and take great pains to keep their fur in order, in cleansing which they mutually assist each other. They leap occasionally in play to a considerable height, and frequently on springing from the ground to an elevation of two feet, descend on the spot from which they rose. Their voice is a short, rather sharp, plaintive pur. The individuals, male and female, show great attachment to each other.

Mr. Vigors exhibited specimens of several species of birds, apparently undescribed, from the Himalayan mountains. These formed part of a collection which Mr. John Gould, A.L.S., had lately received from India, and of which he intended to publish coloured illustrations, to the number of one hundred figures. Several of the plates, representing some of the most interesting of the species, were laid upon the table.

Mr. Vigors having called the attention of the Committee to the expedition with which these birds were made known to science—the specimens themselves not having been more than two months in England, while representations of many of them were already within that short space of time brought before the public,—proceeded to make some remarks upon the geographical distribution of the species. He particularly pointed out the identity of a large proportion of their forms with those of Northern Europe; observing that the elevation of their native mountains placed them on an equality in point of climate with the birds of more northern latitudes. At the same time he added that many of the forms peculiar to Southern Asia and the Indian Archipelago were found intermingled with those of the northern regions. Among the forms similar to the European, he particularized three species of *Jays*, the two first of which exhibited a striking affinity in their markings to our well-known British bird. They were named and characterized as follows:

GARRULUS LANCEOLATUS. *Garr. vinaceo-badius; capite subcristato, gulâ, jugulo, alisque atris; collo anteriori albo lanceolato; pteromatibus remigibusque cæruleo fasciatis, illis albo terminatis; caudâ cæruleâ, nigro fasciatâ, fasciâ latâ apicali albo terminatâ notatâ.*

GARRULUS BISPECULARIS. *Garr. pallidè badius, uropygio crissoque albis; maculâ latâ postrictali, caudâ, pteromatibus, remigibusque atris; his duabus cæruleo fasciatis.*

GARRULUS STRIATUS. *Garr. pallidè brunneus, subtus pallidior; corporis supra subtusque plumis in medio albo longitudinaliter striatis; cristâ verticali, remigibus, rectricibusque unicoloribus.*

This latter species was observed to deviate in general colour and markings from the European species, although according in form;

and in the former characters to exhibit a manifest approach to the *Nutcrackers*, or the genus *Nucifraga* of Brisson.

A new species of this latter European form was also observed in the collection; a second species being thus added to a group which had hitherto been supposed to have been limited to one. In the shape of the bill, which was somewhat shorter and stouter at the base than in the European species, it indicated an approach to the *Jays*. Its characters were as follow:

Nucifraga hemispila. *Nuc. castaneo-brunnea; capite subtus, collo anteriori, dorso, pectoreque albo maculatis; capite summo, alis, rectricibusque intensè brunneis; his, duabus mediis exceptis, ad apicem latè albis.*

The two following species of *Woodpecker*, which approached in size and colouring most closely to the European *green Woodpecker*, were also described.

Picus occipitalis. Mas. *Pic. viridis, uropygio lutescenti; fronte coccineo; vertice, strigâ latâ occipitali ad nucham extendente, alterâque utrinque sub oculos postrictali, atris; remigibus rectricibusque fusco atris, harum duabus mediis pallido-fusco striatis, illis externè albo maculatis; gulâ genisque canis.*

Fœm. *Fronte atrâ albo lineatâ.*

Picus squamatus. *Pic. supra viridis, uropygio sublutescenti; gulâ juguloque viridi-canis; capite coccineo; strigâ superoculari, alterâ suboculari, abdomineque viridi-albis, hoc atro squamato; strigâ superciliari alterâque utrinque mentali atris; remigibus rectricibusque fusco-atris, illis externè, his utrinque albo maculatis.*

A species of *Hawfinch*, according accurately with the characters of that northern form, was also described.

Coccothraustes icterioïdes. Mas. *Cocc. capite, jugulo, dorso medio, alis, femorum tectricibus, caudâque atris; nuchâ, uropygio, corporeque subtus luteis.*

Fœm. *Olivaceo-cana, uropygio abdomineque lutescentibus; remigibus rectricibusque atris.*

As also a small *Owl*, very nearly allied to the *Noctuæ passerina* and *Tengmalmi* of Europe.

Noctua cuculoïdes. *Noct. brunneo-fusca; capite, dorso, tectricibus alarum, corporeque subtus albo graciliter fasciatis; remigibus externè albo maculatis; rectricibus utrinque fasciis albis quinque notatis; gulâ albâ.*

Among the forms peculiar to India was observed a second species of the singular group which contains the *Horned Pheasant*, or the *Meleagris Satyra* of Linnæus, and which has been lately separated by M. Cuvier under the name of *Tragopan*. Its specific characters are:

Tragopan Hastingsii. *Trag. dorso brunneo-fusco undulato, abdomine intensè rubro, amborum plumis ad apicem nigris in medio albo guttatis; cristâ crissoque atris, illâ ad apicem coccineâ, hoc albo maculato; collo posteriori coccineo; thorace aurantio; regione circumoculari nudâ, carunculisque pendentibus luteis; caudâ atrâ, lutescenti-albo undulatâ.*

A species of true *Pheasant*, which seems to have been indicated by former writers from incomplete descriptions or drawings, but never to have been accurately characterized, was also exhibited and named.

PHASIANUS ALBO-CRISTATUS. Mas. *Phas. supra ater, viridi nitore splendens; dorso imo albo fasciato; cristæ plumis albis, elongatis, deorsim recumbentibus, basi subfuscis; remigibus corporeque inferiori fuscis; pectoris plumis lanceolatis albescentibus.*

Fœm. *Corpore supra cristâque breviori fuscescenti-brunneis; abdomine pallidiore; gulâ, plumarumque corporis apicibus et rhachibus albescentibus; rectricibus lateralibus atris, mediis brunneis albescenti undulatis.*

A third species was likewise added from the collection to the group of *Enicurus* of M. Temminck, which has hitherto been considered as limited in range to the Indian Archipelago. The following are its characters:—

ENICURUS MACULATUS. *En. capite, collo, dorso superiori, pectore, ptilis, remigibus secundariis, caudâque intensè atris; frontis notâ latâ, maculis confertis nuchæ et sparsis dorsi, pteromatibus, dorso imo, abdomine, rectricibus lateralibus, mediarumque apicibus albis; remigibus primariis fuscis; rostro nigro; pedibus albescentibus.*

Staturâ *En. specioso* æqualis.

Mr. Owen resumed the reading of his paper On the Anatomy of the *Orang Utan* (*Simia Satyrus*, L.). This part of the communication is devoted to the osteology of the animal, which is minutely described and contrasted with that of the *Chimpanzee*. With the skeleton of the *Pongo* (*Pongo Wurmbii*, Desm.) the resemblance is in many particulars almost complete; and the extensive examination which Mr. Owen has made of entire skeletons of both the *Pongo* and the *Orang*, and of numerous *crania* of the latter at various ages, has led him to adopt the opinion of those who maintain that these constitute really but one species, of which the *Orang* is the young, and the *Pongo* the adult. The remarkable differences in the crest of the *cranium*, and in the facial angle, appear to be the result of the action of the powerful muscles of manducation, and of the development of the extremely large *laniarii*.

A marked peculiarity of the *cranium* of the *Orang* exists in the junction of the sphenoid with the parietal bones; a junction which is not found in the *Chimpanzee*, and has been asserted to exist in man alone. Other peculiarities are met with, in the absence of a *crista galli* on the ethmoid bone, and in the non-existence of either mastoid or styloid processes: there is a process from the particular surface of the temporal bone, which is necessary to prevent dislocation backwards of the lower jaw, the auditory process not being adapted to prevent such an accident. The intermaxillary bones are distinct. There are large *foramina* behind the deciduous teeth, which lead to cavities containing the permanent ones; the crowns of the latter are as large as those of the *Pongo*. The *os* *nasi* is single and triangular; it has a strong spine at the back part. There are three infra-orbital *foramina*; and large *foramina* in the malar bone. The anterior condyloid *foramina* are two on each side.

The true *vertebræ* are 23: 7 cervical, with long simple spines; 12 dorsal; and 4 lumbar. There are 8 false *vertebræ*, viz. 5 sacral, and 3 coccygeal. The ribs are 12; 7 true, and 5 false. The *sternum* is composed, below the first portion, of a double series of bones alternating with each other: the same structure obtains in the *Pongo*.

The spine of the *scapula* is strongly incurvated upwards. The bones of the arm and hand are much elongated. The thumb is short; the proximal *phalanges* of the fingers bent.

The *ilia* are narrow, flattened, and elongated. The *femur* is short and straight; it has no *ligamentum teres*, a deficiency which occurs also in the *Elephant*, the *Sloths*, in *Seals*, the *Walrus*, *Ornithorhynchus*, &c., and by which a greater extent of motion is allowed to the thigh. The *tibia* and *fibula* are shorter than the *femur*: these, like the bones of the fore-arm, have a greater interosseous space than is found in man. The *patella* is very small. The *os calcis* projects far behind. The bones of the *metatarsus* and the *phalanges* are elongated, the first series of the latter being bent. The hinder thumb is very short: in the individual examined it had a metatarsal bone, and two *phalanges*. A nail existed on the thumb of each hinder hand.

December 14, 1830.

G. B. Greenough, Esq. in the Chair.

A letter was read from Dr. Andrew Smith, addressed to N. A. Vigors, Esq. The following are extracts:

"Cape Town, 8th Sept. 1830.

"I am sure you will be pleased to learn that I have discovered another species of *Macroscelides*, as well as a new one of *Erinaceus*; and three species of the genus *Otis*, together with one of *Brachypteryx*. The descriptions of these I hope to be able to forward to you in the course of three weeks or a month. The first is designated in our Museum, *Macroscelides rupestris*; the second, *Erinaceus Capensis*; the third, fourth, and fifth, *Otis Vigorsii*, *Ot. ferox*, and *Ot. Afraoïdes*; the sixth, *Brachypteryx Horsfieldii.* The first was found by myself on the mountains near to the mouth of the Orange river, and the circumstance of its always residing among rocks, together with the difference in its colouring, readily pointed it out as being of a distinct species. As to the colour, the most marked distinction consists in the Cape species having a large tawny rufous or chestnut blotch on the nape and back of the neck. The second, *Erinaceus Capensis*, exhibits considerable affinity to the European species, yet betrays such marked peculiarities as to warrant its being considered as really different from it. The third, *Otis Vigorsii*, inhabits the most dry and barren situations in the south of Africa, and is known among the colonists by the name of *Karor Koran*. The prevailing colour above is a light tawny or reddish yellow, and below tawny gray, passing into dirty white on the belly. The back is variegated by numerous violet blotches or reflections, as well as by whitish spots, and the under parts by transverse narrow zigzag black lines. The fourth is above principally tawny yellow, and below dull blueish gray: it is found in the country toward Latakoo. The fifth is met with on the flats near the Orange river, and is called the *Bushman Koran*. With the exception of a great portion of the quill feathers being white, it resembles much the common *Koran* of the colony, the *Otis Afra*. The sixth is met with in high rocky situations, and agrees in most respects with the generic character of *Brachypteryx*, as described by Dr. Horsfield."

With the above letter Dr. Smith transmitted to the Society a present of sixteen specimens of fishes, obtained in the neighbourhood of the Cape of Good Hope, "the details relative to which," he states, "will be forwarded as soon as possible." The specimens were exhibited, and Mr. Bennett laid on the table a list in which they were enumerated as the *Sebastes Capensis*, *Agriopus torvus*, *Sciæna hololepidota, Otolithus æquidens, Chrysophris globiceps, Chr. gibbiceps,* and *Pagrus laniarius,* of MM. Cuvier and Valenciennes; an undetermined species of *Dentex*; a fish allied to *Oblada*, Cuv., and apparently the type of a new genus; a new species of *Scomber*, Cuv.; a *Lichia*?; two species of *Clinus*, Cuv., one of which is probably the *Clinus Capensis*; an undescribed species of *Bagrus*, Cuv., of the section distinguished in the "Règne Animal" by having six *cirri* and a rounded and smooth head; a species of *Scyllium*, Cuv., probably new to science; and a second species of the genus *Rhina*, Schn., which deviates from the type by a slight production of the front of the head, and thus makes an approach to *Rhinobates*, Schn.

Mr. Vigors exhibited several species of *Humming-birds* from the collection of Mr. John Gould, one of which, previously undescribed, had been dedicated to Mr. George Loddiges, F.L.S., &c. It approaches most nearly to the *Trochilus Lalandei*, Vieill., but may be distinguished from that bird (in which the crest is brilliantly green and the throat and breast rich blue,) by the following characters:

TROCHILUS LODDIGESII, Gould. *Troch. cristá elongatá, purpureo-lilaciná; gulá crissoque saturatè cinereis; pectore abdomineque nigris.*

This species is from Rio Grande.

Mr. Loddiges stated that both species belonged to a genus which he had distinguished among the *Trochilidæ* by the name of *Cephallepis*; and promised to bring before the Committee, at an early meeting, the results of his researches on the *Trochilidæ* generally.

At the request of the Chairman, Mr. Martin reported the diseased appearances noticed on the examination of the *Beaver* which recently died in the Society's Menagerie. They were stated to be such as result from great and universal inflammation. On examining the stomach, its lining membrane was found covered with a blush of inflammation, prevailing more especially about its cardiac portion, where a number of dark-coloured spots and patches indicated the existence of gangrene. Both the stomach and the *colon* contained undissolved fibres of bark in considerable quantity, the function of digestion having been for some time past necessarily deranged. Along the course of the small intestines, traces of high arterial action were still presented; in the large intestines the traces of inflammation were more obscure. The *pericardium* was highly inflamed, its inner surface presenting a granulated appearance. The heart also, as well as the lungs, gave evidence of having partaken in the general disease. Much disease existed about the lower jaw, which may probably have been the primary cause of all the mischief, as it must have existed for several months, and necessarily have produced a continued state of irritation in the system. The alveolar processes of the lower jaw, embracing the incisor teeth, were destroyed by *caries*, and the teeth themselves had fallen out.

In the adjacent soft parts there were extensive abscesses, and a wide spread of discoloration, evidencing the progress of the disorganization.

Mr. Cox exhibited a *Nightingale* in fine plumage and full song, which had been for four years in confinement. He stated that the error generally committed by persons attempting to keep these birds and the other species of *Sylviadæ*, was the over care bestowed upon them. A treatment not more tender than that afforded to granivorous species, agreed well with the *Nightingale*, for which it was by no means necessary to provide insects as food; meat scraped fine and mixed with egg forming a sufficient substitute, and furnishing a nourishment at once grateful to the bird and fully adequate to supply its wants.

Mr. Bennett called the attention of the Committee to two birds which had been for some time living in the Society's Garden. In many respects, especially as regards the nakedness of their cheeks, and the nakedness, length, and reticulation of their *tarsi*, they agree with the *Caracaras* (*Polyborus*, Vieill.); but differ from the type of that genus in the greater compression of their beaks; their transverse oval nostrils; their comparatively slender make; and their more vulturine appearance, which is much increased by the soft downy nature of the plumage of their head and neck. From the genus *Morphnus* of M. Cuvier, which they resemble in many particulars, they are at once distinguished by the length of their wings, which reach, when closed, to the extremity of the tail. He stated his opinion that they would be found, on a close examination, (which could only be made after death,) to constitute a new genus. Until the opportunity of determining this question should occur, he associated them provisionally with the *Caracaras*; and having met with no trace of a description of them in any ornithological writer, he proposed for them the following specific character:

POLYBORUS? HYPOLEUCUS. *Pol.? capite, collo, pectore, abdomineque albis; scapularibus fusco-griseis; dorso tegminibusque fuscis; remigibus nigricantibus; caudá basi nigrá, apice fasciá latá albidá.*

Jun. *Fuscus, capite, collo, corporeque subtus dilutioribus, remigibus fusco-nigricantibus.*

The following observations, by Mr. Yarrell, on the subject of his attempts to preserve *Whitebait* alive, were read.

"Several dozens of strong lively fish, four inches in length, were transferred with great care from the nets into large vessels, (some of the vessels, to vary the experiments, being of earthenware, and others of wood and metal,) filled with water taken from the Thames at the time of catching the fish. At the expiration of twenty minutes nearly the whole of them were dead, none survived longer than half an hour; and all fell to the bottom of the water. On examination, the air-bladders were found to be empty and collapsed.

There was no cause of death apparent. About four dozen specimens were then placed in a coffin-shaped box pierced with holes, which was towed slowly up the river after the fishing-boat. This attempt also failed: all the fish were dead when the vessel had reached Greenwich.

"I was told by two Whitebait fishermen that they had several times placed these fishes in the wells of their boats, but they invariably died when brought high up the river. The fishermen believe a portion of sea water to be absolutely necessary to the existence of this species, and all the circumstances attending this particular fishery appear to prove their opinion to be correct."

A report by Mr. Yarrell on the morbid appearances observed in the examination of the Society's *Reindeer*, was read. It is as follows:

"On opening the body and removing the *viscera*, the lungs appeared highly inflamed, of a dark purple colour; and on cutting into their substance, the cells contained matter. The small intestines also bore marks of inflammation, but in a much less degree: the mesenteric glands were diseased, but not to the extent that might have been expected in an animal that had been many years in an artificial state. The external surface of the neck and head exhibited a high degree of vascularity, and the animal appeared to have been under the influence of that periodical determination of blood to the head, which is known to occur in all deer at the annual production of new horns. As far as the brain could be examined by the occipital *foramen*, both the substance and its investing membranes were also inflamed; but I have no doubt the primary cause of death was the inflammation of the lungs."

Several new species of birds belonging to the collection brought home from the Straits of Magellan by Captain King were exhibited. In the absence of that gentleman, the following species were pointed out by Mr. Vigors, which are thus characterized in Captain King's MSS.

TURDUS MAGELLANICUS. *Turd. corpore supra grisescenti-olivaceo, subtus pallidè rufescenti; capite supra, remigibus, caudâque fusco-atris; gulâ albâ, fusco-atro lineatâ.*

Habitat in Fretu Magellanico.

PSITTACARA LEPTORHYNCHA. *Psitt. viridis; fronte, strigâ per oculos, caudâque rufis; capite nigro, abdomine imo rufo, variegatis; mandibulâ superiori elongatâ, gracillimâ.*

Staturâ *Psitt. Lichtensteinii* æqualis.

Habitat in insulâ Chiloe.

PICUS MELANOCEPHALUS. *Pic. capite corporeque supra nigris, hoc albo maculato; pectore abdomineque albis, illo albo lineato, hoc albo fasciato.*

Longitudo 6 vel 7 uncias circiter.

Habitat in Fretu Magellanico et insulâ Chiloe.

Hylactes. Novum genus, *Megapodio* affine.

Characteres Generici.

Rostrum subelongatum, subtenue, apice subemarginato : *naribus* basalibus, longitudinalibus, membranâ subtumescenti pilisque per mediam longitudinem tectâ.

Alæ brevissimæ, rotundatæ ; *remige* 5tâ longissimâ.

Cauda subelongata, gradata.

Pedes fortes ; *tarsis* subelongatis, in fronte scutellatis ; *digitis unguibus*que elongatis, his fortioribus subcompressis ; *halluce* fortissimo, incumbente.

Hylactes Tarnii. *Hyl. saturatè fusco-brunneus ; fronte, dorso, abdomineque rufis, hoc fusco fasciato.*

Habitat in insulâ Chiloe et Portu Otway Sinu Peñas.

Columba Fitzroyii. *Col. vinacea ; alis, dorso imo, caudâque plumbeis ; hujus fasciâ, remigibusque atris ; nuchæ plumis viridisplendentibus ; fasciâ occipitali albâ.*

Habitat in nemoribus insulæ Chiloe.

Cygnus anatoïdes. *Cygn. albus, remigibus primariis ad apicem nigris ; rostro pedibusque rubris, illo lato, subdepresso, tuberculo nullo.*

Habitat in sinubus interioribus apud extremitatem meridionalem Americæ.

Anser inornatus. Mas. *Ans. albus : dorso inferiori, caudâ, fasciis nuchæ dorsique superioris femorumque tectricum, pteromatibus, remigibusque atris ; rostro nigro, pedibus flavescentibus.*

Fœm. *Capite colloque canis ; dorso superiori corporeque inferiori albis, nigro confertim fasciatis ; dorso imo, remigibus, rectricibusque nigris ; ptilis speculoque albis ; tarsis subelongatis.*

Habitat in Fretu Magellanico.

Micropterus Patachonicus. *Micropt. supra plumbeo-grisescens ; gulâ scapularibusque rufescentibus ; abdomine speculoque alarum albis ; rostro virescenti-nigro, ungue nigro.*

Habitat in parte occidentali Fretûs Magellanici.

Staturâ minor *Micropt. brachyptero.*

Anas chiloensis. *An. fronte, genis, abdomine, uropygio, pteromatibusque albis ; capite posteriori, collo, dorso inferiori, ptilis, remigibus primariis, caudâque fuscis ; dorso superiori pectoreque fusco et albo fasciatis ; remigibus secundariis et tertiis scapularibusque nitidè atris, his albo lineatis ; abdominis lateribus crissoque rufescentibus ; strigâ post oculos latâ splendidè purpurascenti-viridi.*

Longitudo circa sexdecim uncias.

Habitat in insulâ Chiloe.

Anas fretensis. *An. gulâ, genis, collo, pectore, dorsoque anteriori pallidè badiis ; collo graciliter undulato ; pectore dorsoque anteriori atro maculato ; dorso abdomineque imis, crisso, caudâque albis nigro fasciatis ; dorsi fasciis latis, abdominis gracillimis, caudæ sublatioribus, crissi sparsim undulatis ; capite supra, remigibus, scapularibusque virescenti-atris ; his albo in medio linea-*

tis; tectricibus plumbeo-canis, fasciâ apicali albâ: speculo supra viridi, deinde purpureo, fasciâ atrâ apice albo terminatâ.

Statura *Anatis creccoidis*, Nob.

Habitat in Fretu Magellanico.

It was announced that the whole collection of Capt. King's birds, with the descriptions of the remaining new species, would be brought forward at an early meeting.

December 28, 1830.

W. Yarrell, Esq. in the Chair.

The form of a circular letter, to be addressed to the heads of Menageries and Museums in foreign countries, was submitted to the Committee, and approved of.

A letter was read, addressed to the Secretary of the Society by J. V. Thompson, Esq., dated "Cork, Dec. 16, 1830." In it Mr. Thompson urges, in support of the universality of a metamorphosis among the *Crustacea*, that he has ascertained the newly hatched animal to be a *Zoea* in eight genera of the *Brachyura*, viz. *Cancer*, *Carcinus*, *Portunus*, *Eriphia*, *Gecarcinus*, *Thelphusa?*, *Pinnotheres*, and *Inachus*; and in seven Macrourous genera, viz. *Pagurus*, *Porcellana*, *Galathea*, *Crangon*, *Palæmon*, *Homarus*, and *Astacus*. "These embrace all our most familiar native genera of the *Decapoda*." The *Lobster*, or *Astacus marinus*, Mr. Thompson states, "does actually undergo a metamorphosis, but less in degree than in any other of the above-enumerated genera, and consisting in a change from a cheliferous *Schizopode* to a *Decapode*; in its first stage being what I would call a modified *Zoea* with a frontal spine, spatulate tail, and wanting the subabdominal fins; in short, such an animal as would never be considered what it really is, was it not obtained by hatching the spawn of the *Lobster*." In the other indigenous species of *Astacus*, *Ast. fluviatilis*, the *River Crawfish*, it would appear from the excellent treatise of M. Rathke on the development of its eggs, that the young are hatched in a form according with that of the fully grown animal. Mr. Thompson, however, suspects that some source of error may exist in these observations. "If it should be found otherwise, it can only be regarded as one solitary exception to the generality of metamorphoses, and will render it necessary to consider these two animals for the future as the types of two distinct genera." In illustration of the change of form observed by him in the limbs of the *Lobster*, Mr. Thompson inclosed a sketch of the "cheliferous member of its *larva*," which is represented as divided to its base, and consisting of, 1. a cheliferous portion; 2. a portion of equal length with the preceding and terminated by natatory cilia (described as the outer division of the limb, or future *flagrum*); and 3. a short rudiment of one of the future *branchiæ*.

A specimen of the *Labrus maculatus*, Bloch, presented to the Society by Sir A. Carlisle, was exhibited. When quite recent, its rich deep blue colouring was stated to have been extremely beautiful; but this had already disappeared considerably, although the specimen had been but twelve days in spirit. Still enough remained to show how defective in this particular is the figure in Bloch's Ichthyology [No. 294.], which appears to have been taken from a dried specimen, and exhibits scarcely a trace of the rich colouring of the recent fish.

The Chairman brought to the recollection of the Committee the recent addition to the British Fauna of a species of *Warbler* (the *Sylvia Tithys*, Scop.) nearly allied to the *Redstart*, *Sylvia phœnicurus*, L., but distinguished from that bird by its dark slate-coloured breast, and by the dusky-black colour of its two middle tail-feathers. The first occurrence of this bird in England was recorded in the 5th volume of the "Zoological Journal," page 102, by Mr. John Gould, who has since ascertained that two other individuals have been met with; one in the neighbourhood of Bristol, the other at Brighton. Both these specimens were obtained during the last summer. The Chairman added, as a peculiarity of this bird, that its egg, as described and figured by continental writers, is white; while the eggs of all the nearly allied species are pale blue.

A communication by J. C. Cox, Esq., F.L.S., &c., was read, on the subject of preserving a proper temperature for exotic animals. Mr. Cox commences by remarking on the capability of animals for enduring great extremes of temperature, and instances the experiments of Sir Joseph Banks and Sir C. Blagdon, in which a heat of at least 230° was borne without great inconvenience; while, on the other hand, Captain Parry and his men were exposed to a temperature of —40° and even lower: thus showing that the human frame is susceptible of a range of temperature of probably 300°, without injury to life. Such extremes can, however, be submitted to but for a short period. To keep animals, natives of tropical climates, in good health, they should be preserved from too great extremes; and as it is important to imitate as much as possible the character of the climate from which they are brought, the hygrometric state of the atmosphere should be attended to almost equally with the temperature. The hot winds of the Desert (Mr. Cox remarks), together with the absorbent nature of the sandy soil, render the general state of the atmosphere in the central parts of Africa that of extreme dryness; but this is an exception to intertropical regions in general. In Guiana and La Plata, for instance, and in Ceylon, the thick woods exhale a considerable degree of moisture, far exceeding that of our own country; the mean dew point of the atmosphere of London being 44°·5, while that of intertropical regions is from 70° to 75°. Animals from such climates, it is suggested, require a moist atmosphere, and this may readily be produced by watering the flues used for heating the houses in which they are kept. Analogous to this is the advantage obtained in the cultivation of stove plants by keeping the houses well-watered. The neglect of supplying to the air a sufficient quantity of simple and innoxious moisture is attended with two evils. Not only are the animals kept in an atmosphere too dry for their healthy preservation; but the dry air, greedily absorbing moisture, becomes impregnated with the excreted fluids of the animals in confinement; and thus the secreting surfaces of the lungs are at once exposed to a constant stimulus from increased and rapid exhalation, and to the additional stimulus inflicted by the continual breathing of air loaded with saline and irritating particles. In well-constructed houses it is of the first importance that the fluids of the animals should be conducted from the buildings. Ventilation should also be perfect not only through the body of the building, but through each individual cage or den. This is doubly necessary where the air is vitiated, not only by the animals themselves, but by numerous visitors. For the general regulation of the admission of cold air a convenient plan is to have a leaden or iron weight balanced in a vessel of mercury, attached to a sliding sash, which will thus rise or fall in proportion to the height of the mercury. Mr. Cox regards it as of no importance, as to the effect produced on the atmosphere, by what means an increased temperature is preserved, whether by flues or steam or hot water, if the degree obtained be the same: the only reason for preferring one to another is the greater facility it may afford of keeping up an equable temperature.

Mr. Owen read a portion of his notes made at the dissection of the *Beaver* which died lately at the Society's Gardens. He limited himself on this occasion to the description of the organs connected with digestion. The salivary organs and those of deglutition were treated of in detail: the former parts, which are remarkably developed in all the *Glires*, were especially examined on account of the peculiar nature of the animal's food; while the latter claimed particular attention from the recent interesting discovery by Mr. Morgan of a peculiar construction of the *fauces* in the *Capybara*, and some others of the Rodent order.

Of the salivary glands the *parotid* are the largest. They are united, like the lateral lobes of the thyroid gland in man, by an anterior transverse portion; and form together a conglomerate mass which extends across the front of the neck to within a short distance of the upper part of the *sternum*, covering the *larynx* and its muscles, and passing backwards on each side as far as the mastoid process. There are, however, two ducts, one on each side, which terminate in front of the molar teeth. The *submaxillary* glands are quite distinct from the parotid, and are each about the size of a walnut: their ducts pass under the jaw and terminate at the side of the *frænum linguæ*. The *sublingual* glands are very small.

Between the membrane of the palate and the bone, in the narrow space between the rows of molar teeth, a layer of mucous glands is situated: and a thick stratum of the same kind of glands exists also immediately exterior to the membrane of the *fauces*.

The soft palate extends backwards from the posterior edge of the bony palate as far as the circular aperture of the posterior *nares*. The sides of the soft palate are continuous with the tongue, and, becoming gradually contracted, form *fauces* of a funnel shape, the posterior aperture of which just admits a black-lead pencil of the usual size for drawing. The membrane covering the posterior part of the *dorsum* of the tongue is continued smoothly and uninterruptedly to the *epiglottis*, without the production of any fold of membrane in front of this part, nor was there any corresponding duplicature above, or at the sides of, the *fauces*: so that here no structure existed that would allow any part of the *fauces* to be protruded in a conical form into the *pharynx*, beyond the opening of the *glottis*, as in the *Capybara* and *Guinea-pig*.

The *fauces* of the *Rat* are formed after the same type as those of the *Beaver*: a type which is peculiar, inasmuch as there is properly speaking no *velum pendulum palati*, the membrane forming the roof of the *fauces* being continued straight, without duplicature or reflection, to the posterior aperture of the *nares*: this aperture is of a circular form, on a horizontal plane, and situated immediately above the *glottis*.

The muscular apparatus of the *fauces* consists of a pair of muscles which arise, one from each side of the tongue, and ascend, the fibres diverging a little; their action is to contract the commencement of the *fauces*, being analogous to the *palato-glossi*: besides these there are, at the narrower part of the *fauces*, circular fibres, apparently continued from the superior *constrictor* of the *pharynx*, and analogous to the *palato-pharyngei*.

There are no palatal arches, neither were any tonsils detected.

The peculiar cardiac gland much resembles tonsils in structure, being composed of numerous small glands or follicles, forming an aggregate of about 14 lines in length and half an inch in thickness, which pour a viscid secretion, by numerous apertures, into the interior of the stomach.

The *pancreas* is of considerable extent, measuring in length nearly two feet, and following the course of the *duodenum* down to the iliac region and up again as far as the umbilical, being attached to the intestine by a process of mesentery: it is thin and narrow, and has one small branch or process lying parallel with its body where it passes behind the liver, and a few others at the curvature of the *duodenum*. Its duct, somewhat larger than a crow-quill, enters the small intestine at the extremity of the gland, one foot and nine inches from the *pylorus*, and one foot and six inches from the termination of the *ductus choledochus*.

At the commencement of the *colon* there are two pouches of an oval form, from the union of which the rest of the intestine proceeds with very distinct *sacculi*. An analogous structure exists in the *cæcum* of the *Guinea-pig*, where however the two *sacculi* appear rather to belong to the *cæcum*, being partially separated from the *colon* by a circular production of the lining membrane in a valvular form.

January 11, 1831.

Sir Thomas Phillipps, Bart., in the Chair.

An Address by Mr. J. V. Thompson "To the Members of the Zoological Society, and the Zoologists of the United Kingdom in general," was read, soliciting such support, by subscription, as may enable him to continue, without further loss, his "Zoological Researches and Illustrations." This Address is printed, together with a list of the subjects of some of the succeeding Memoirs, on the cover of the Fourth Number of the Researches, which was at the same time laid on the table.

An Extract was read from a Letter addressed by Daniel Sharpe, Esq., to Mr. Bennett, in which the writer describes the luminous appearance of the ocean as observed by him on several nights during his passage to Lisbon. A considerable sparkling was visible in the water close under the vessel's side, particularly in the spray just thrown off from the bow, and also occasionally when a wave broke: it gradually vanished as the water became quieter. The appearance was that of a number of small sparks not brighter than the smallest stars. When a bucket full of the water was taken up, nothing was visible until it was stirred or shaken, when it was instantly filled with spangles, which disappeared as the water settled: the most elegant effect was when the waves or spray broke over the deck, which then became covered with stars for a few minutes. Mr. Sharpe states that he collected a great quantity in a glass, and examined them carefully with a microscope the next morning, in the expectation of observing minute *Crustacea*, &c., to which the appearance he describes has frequently been attributed. He could, however, detect nothing but an abundance of small fibres and shreds of, apparently, animal matter, and did not find even one entire animal. Hence he is disposed to infer that, in some instances at least, the phosphorescence of the sea arises from the quantity of particles of dead fishes, &c., always floating on its surface; although he confesses himself unable to explain the reason why these shine only when the water is disturbed.

It was remarked that Commerson and others have attributed the phænomenon described to the putrefaction of animal matters: and M. Bory de St. Vincent has declared that marine *animalcula* take no share in it. Sir Joseph Banks, Dr. Macartney, and others, on the contrary, have referred it to the presence of marine animals, principally *Crustacea*; and the existence of such, as the cause of this appearance, has been recently insisted on by Mr. J. V. Thompson.

Dr. MacCulloch has also attributed it to the latter cause; and states that every marine animal that he has examined is luminous. Assuming the observations of M. Bory de St. Vincent and those of Dr. MacCulloch to be equally correct in the instances which fell under their notice, it is worthy of inquiry whether any, and what, differences exist in the luminosity of the ocean, when it is occasioned by marine animals, or when it is owing to other causes.

Mr. Yarrell exhibited a female of the common *game Fowl* which had assumed the plumage of a male. The dull brown colour of the breast was varied by an intermixture of the jet black plumage peculiar to the male; the feathers of the neck and those on the sides of the tail were long, slender, hackled and bright in colour; all the tail feathers were more or less curved; and the spurs were half an inch in length. This bird very closely resembled the representation attached to Dr. Butter's paper on this subject in the third volume of the "Memoirs of the Wernerian Society." A portion of the body of the bird was also shown, the disease of the sexual organ pointed out, and its appearance contrasted with preparations of the same parts from healthy birds. The cause of this change in the external character is fully detailed in John Hunter's "Animal Economy," in the Wernerian Memoirs before mentioned, and in a paper by Mr. Yarrell, published in the "Philosophical Transactions" for 1827.

Mr. Vigors resumed the exhibition of the birds from the Himalayan Mountains, which he had commenced at the Meeting of the 23rd Nov.; and named and characterized the following apparently new species:

ALCEDO GUTTATUS. *Alc. cristatus, supra ater, maculis rotundis albis guttatim notatus; subtus albus; colli lateribus pectoreque atro maculatis.*

Statura *Alc. maximi.*

MUSCIPETA PRINCEPS. *Musc. capite, collo, dorso summo, alis, rectricibusque duabus mediis nigris; corpore inferiori, dorso imo, fasciâ latâ alarum, maculis paucis remigum secundariarum, rectricibusque lateralibus aurantio-coccineis; rostro fortiori.*

Longitudo circiter 9 uncias.

LANIUS ERYTHROPTERUS. Mas. *Lan. nuchâ dorsoque griseis; capite supra, alis, caudâque atris; corpore subtus, strigâ superciliari, remigumque apicibus albis; alis maculâ latâ rubrâ notatis.*

Fœm. *Capite griseo; dorso, alis, rectricibusque virescenti-olivaceo notatis; harum apicibus flavis.*

Statura *Lan. Collurionis.*

PARUS MONTICOLUS. *Par. capite, collo, pectore, abdomine medio, alis, rectricibusque atris; genarum maculâ latâ nuchalique parvâ, tegminum remigum secundariarum rectricumque apicibus, et remigum primariarum rectricumque lateralium pogoniis externis albis; abdominis lateribus flavis.*

Staturâ paulo minor *Par. majori.*

Parus xanthogenys, *Par. capite cristato, gulâ, pectore, abdomine medio, strigâ utrinque colli, scapularium maculis, alis, caudâque atris, his albo notatis; dorso scapularibusque virescenti-griseis; genis, strigâ superciliari, maculâ nuchali, abdominisque lateribus flavis.*

Statura præcedentis.

Parus melanolophus. *Par. griseus; capite cristato pectoreque atris; genarum, nuchæ, tegminumque alarum maculis albis; remigibus rectricibusque fuscis; maculâ sub alis rufâ.*

Staturâ *Par. atro* paulo minor.

Parus erythrocephalus. *Par. supra pallidè brunnescenti-canus, subtus rufescenti-albus; gulâ, strigâ superciliari, rectricumque lateralium pogoniis externis albis; capite supra rufo; strigâ latâ per oculos ad nucham extendente, thoraceque atris.*

Statura *Par. pendulini*, Linn.

Fringilla rodopepla. *Fring. supra brunnea; capite, nuchâ, dorsoque lineis fuscis rosaceoque nitore notatis; strigâ utrinque superciliari, gulâ, thorace, maculis alarum, uropygio, corporeque subtus rosaceis.*

Longitudo circiter 7 uncias.

Fringilla rodochroa. *Fring. supra brunnea; capite, nuchâ, dorsoque lineis fuscis, illo rosaceo tinctis; fronte, strigâ utrinque superciliari, gulâ, pectore, corpore subtus, uropygioque rosaceis; alis immaculatis.*

Longitudo circiter 5½ uncias.

Carduelis caniceps. *Card. brunnescenti-canus; alis caudâque nigris; circulo angusto frontem rictum gulamque circumcingente coccineo; fasciâ alarum aureâ; thorace, maculis paucis alarum, uropygio, abdomine imo, crisso, rectricum externarum pogoniis internis, mediarumque apicibus albis.*

Statura *Card. communis.*

Picus hyperythrus. Mas. *Pic. corpore supra nigro, albo-maculato, subtus rufescenti-badio; capite crissoque coccineis; strigâ utrinque per oculos extendente albâ; mandibulâ superiori nigrâ, inferiori albâ.*

Fœm. *Capite nigro albo-lineato.*

Statura *Pic. medii*, Linn.

Columba leuconota. *Col. capite canescenti-atro; crisso caudâque nigris; nuchâ, corpore subtus, dorso medio, caudæque fasciâ latâ mediâ, albis; tegminibus alarum vinaceo-canis; dorso superiori scapularibusque brunnescenti-canis; remigibus, fasciisque alarum brunnescenti-fuscis.*

Statura *Col. Palumbi*, Linn.

Otis himalayanus. *Ot. niger; alis albis; dorso medio scapularibusque pallido-rufo brunneoque variegatis; dorso imo pallido-rufo undulatim sparso; cristæ collique plumis anterioribus et posterioribus confertis, elongatis.*

Mr. Vigors exhibited a living specimen of a new species of *Ground Parrakeet*, which had lately been added to the Society's Menagerie. Its native place was not ascertained: but from the more graduated

form of the tail and the plumbeous colour of the bill, it was conjectured to have belonged to some of the Australian islands; the *Parrakeets* of which are distinguished by these characters from the allied groups of the same genus *Platycercus* of the Australian continent. The lively and active gait of this bird, as distinguished from the slow and climbing motions of the *Parrots* in general, was particularly noticed. Its colour was a uniform green without any markings. It was named and characterized as

PLATYCERCUS UNICOLOR. *Plat. corpore viridi concolore; rostro basi plumbeo, apice nigro.*

Mr. Vigors also exhibited a specimen of the *lineated Pheasant* of Dr. Latham [*Gen. Hist. vol.* viii. *p.* 201. *sp.* 14.] which had lately been received from the Straits of Malacca. The bird accorded accurately with Dr. Latham's description, as communicated to him by Dr. Buchanan from a living specimen in an aviary in India, and afforded evident proof of being a distinct and strongly marked species. It may be characterized as follows:

PHASIANUS LINEATUS, Lath. MSS. *Phas. supra cano-griseus; fasciis gracilibus nigris undulatus; capite, cristâ elongatâ, gulâ, collo anteriori, corporeque infra nigris; abdominis laterum plumis in medio lineis gracilibus albis notatis; caudâ albo nigroque undulatim sparsâ.*

A large collection of *Insects*, of various orders, presented to the Society by Dr. Leach, was exhibited. It was chiefly formed in the neighbourhood of Rome and Florence; and notes were appended to the greater number of the species, indicating the precise locality of each, the time of its appearance, its food, comparative rarity, &c.

The attention of the Committee having been directed to that part of the Minutes of the Council which referred to the preparation of a Report on the animals which it was desirable for the Society to import:

It was resolved,

That Sir Thomas Phillipps, Mr. Vigors, Mr. Owen, Mr. Cox, and Mr. Bennett, be requested to prepare, for the consideration of the Committee at its next Meeting, a Report on the animals for the importation of which the Council should be recommended to take measures.

The following Resolution was also submitted to the Committee, and adopted:

Resolved,

That Mr. Morgan, Mr. Yarrell, and Mr. Vigors, be requested to prepare a series of questions on points relating to the generation, gestation, parturition, and suckling of the *Kangaroo*, in order that the same may be submitted to the Council, with a request that directions may be given to the Superintendents of the Society's establishments to obtain information thereon.

January 25, 1831.

Sir Thomas Phillipps, Bart. in the Chair.

A specimen of the *Cereopsis Novæ Hollandiæ*, Lath., which had recently died at the Society's Menagerie in the Regent's Park, was exhibited.—Mr. Yarrell stated that having examined the body of the bird, he had remarked that its trunk was much shorter than that of the true *Geese*, and more triangular in its shape: the pectoral muscles were large and dark coloured. The *trachea* was of large, but nearly uniform, calibre, without convolution, and attached in its descent to the right side of the neck as in the *Heron* and *Bittern*; in the form of its bone of divarication and *bronchiæ* it most resembled the same part in the *Geese*. The muscles of voice were two pairs; one pair attached to the shafts of the *os furcatorium*, the other to the inner lateral surface of the *sternum*. The lobes of the liver were of large size, morbidly dark in colour; their substance broke down under the finger on the slightest pressure. The stomach, a true gizzard, was of small size as compared with the bulk of the bird. The first duplicature of intestine was six inches in length, at the returning portion of which the biliary and pancreatic ducts entered; from thence to the origin of the *cæca* four feet six inches; the *cæca* nine inches each; the *colon* and *rectum* together five inches: the whole length of the intestines was seven feet five inches. The stomach and intestinal *viscera* were loaded with fat; the other parts exhibited nothing remarkable.

Internally this bird, which was a male, resembled the true *Geese*; but externally, in the character of the bones, particularly in the rounded form of the edge, and great depth, of the keel of the *sternum*, and the lateral situation of the *trachea* in reference to the cervical *vertebræ*, it was decidedly similar to the *Ardeidæ*.

Mr. Yarrell availed himself of the occasion to remark that the *Natatores* of Mr. Vigors's systematic arrangement in Ornithology were placed between the *Grallatores* or *Waders* on the one side, and the *Raptores* or *Birds of Prey* on the other: and that the order contained five groups, two of which, the *Alcadæ* and *Colymbidæ*, were called normal, containing those birds which were considered to be the types of the true *Swimmers*, and three groups, *Anatidæ*, *Pelecanidæ*, and *Laridæ*, called aberrant, as deviating from the type, and exhibiting some characters which connected them either with the *Grallatores* or the *Raptores*. Some of the *Laridæ* and *Pelecanidæ* in the length of their wings, their consequent power of flight, and the mode of taking their food in the air, exhibited their obvious affinity to the *Birds of Prey* on the one hand; while some of the *Anatidæ*, by their lengthened legs and neck, and their habit of passing much of their time on land or frequenting shallow pools of water, showed an equal affinity to some of the *Waders*. This was the case with the *Cereopsis*, and occurred also in the *Semipalmated Goose* and in another *Goose* now living in the Society's Gardens, the *Anser jubatus*, Spix.

It was stated that in proportion as these birds departed from the characters of the true *Geese* in their external appearance and habits, and in both approached to the *Ardeidæ*, they would also be found on examination to resemble them in their internal organization. In proof of this an extensive series of parts of the skeletons of birds from the true *Divers* to the *Cranes* was exhibited, and the peculiarities pointed out. The keel of the breast-bone in the *Ducks* and true *Geese* was shown to be of considerable depth, with its inferior edge nearly straight; those of the *Semipalmated Goose* and *Cereopsis* were shown to be much deeper in the keel, and the inferior edges much more convex; and comparison with the same parts from the *Spoonbill*, *Herons*, *Bitterns*, and *Storks*, showed the approximation to the *Ardeidæ* in form. The peculiarities of the whole series indicated, between the two extreme points, the developement of the powers of flight as contrasted with the maximum of the powers of diving, in a succession of characters as easily recognisable in the skeletons as in the external appearances of the birds themselves, and supplied a valuable auxiliary chain of affinities to assist the naturalist in his views of arrangement.

On the subject of the *Cereopsis* Mr. Bennett observed, that having lately had occasion to investigate the history of that bird, he had met with some facts respecting it which might not be without interest. After noticing the mistakes in Dr. Latham's original description and figure, which have been already corrected by MM. Temminck and Vieillot, he pointed out certain errors in those given by the two last-named writers, as compared with the bird on the table, and with seven living specimens in the Society's Collection, all of which, he believed, had been hatched in this country. Thus in the description of the latter author it is said, "la tête est couverte d'une peau nue, ridée et jaune, depuis la base du bec jusqu'audelà des yeux"; and in that of the former, "une peau ridée et jaunâtre couvre le front"; but this supposed naked skin does not exist in nature, and although represented in M. Vieillot's figure, is very properly omitted in that of M. Temminck. The latter indeed is, with the exception of the legs being coloured of a dingy yellow instead of a deep orange, a very characteristic representation. No synonyms had hitherto been added to the original name; but Mr. Bennett stated that he had little doubt, both from the description and locality, that a bird mentioned by Labillardière as seen at Esperance Bay, on the south coast of New Holland, and named by M. Vieillot, in the "Nouveau Dictionnaire d'Histoire Naturelle," *Le Cygne cendré*, was of the same species. To this bird it would appear, from d'Entrecasteaux's Narrative, that the unfortunate Riche had applied in his MSS. the name of *Anas Terræ Leeuwin*. On a specimen, in all probability not distinct, brought home by Labillardière, M. Vieillot founded a new species of Goose, *Anser griseus*, described at length in the second edition of the "Nouv. Dict. d'Hist. Nat." If this assumption be correct, the same individual must have afterwards served as the type of his figure of the *Cereopsis*; for only a single specimen of that bird existed until very lately (or indeed probably still exists) in the gallery of the Paris Museum, in which Labillardière's specimen was deposited.

A specimen was exhibited of a small species of *Deer* from Chili, which had lived in the Society's Menagerie for upwards of twelve months, and which Mr. Bennett stated that he believed to be new. It is a female, and consequently does not offer the accessory characters which zoologists have been in the habit of deriving from the horns. The other distinctive marks are as follows:

CERVUS HUMILIS. *Cerv. parvus, obesus, brevipes; facie latâ, brevi, obtusâ; fissurâ infra-orbitali mediocri; caudâ subnullâ: corpore toto rufo, anticè nigrescenti, posticè fronte pedibusque inferioribus saturatioribus, infrà dilutiori.*

Alt. ad humeros vix 1½ ped.: long. caudæ vix unciam superans.

Mr. Bennett added that he was informed by Captain P. P. King, R.N., that a second skin of the same species had been brought to England by him; that the young was spotted with yellow, and had a yellow stripe on each side of the back; and that the animal was plentiful at Concepçion, and found even as far south as the Archipelago of Chiloe, living, he believed, in small herds.

A hybrid *Pheasant* belonging to the Society having lately died at the Garden, Mr. Yarrell observed that he had examined its body, a preparation of a part of which, together with the preserved skin, was then on the table. He remarked that in mules produced between animals placed at different degrees of distance from each other in the scale of Nature, it was a point of some interest to ascertain the relative state of the sexual organs, which it might be expected would be found more or less perfect, depending on the extent of the distance interposed between the parent animals. The bird in question was a male, bred between the *pheasant* and the *common fowl*, but most allied in appearance to the former. The sexual organs appeared to be perfect and of large size for the period of the year.

Three examples of the *Ardea Nycticorax*, Linn., were placed on the table. On these Mr. Yarrell observed that the Menagerie of the Society had furnished an interesting link in this species, in a young bird which united in its plumage the brown spotted wing of the *Gardenian Heron* with the black head and ash-coloured back of the *Night Heron*: thus exhibiting the change from the young to the adult bird, and proving that the two supposed species are really but one.

Two living specimens were exhibited of the *Suricate*, *Ryzæna* *tetradactyla*, Illig., which had recently been added to the Society's Collection. Both individuals were extremely gentle, and suffered themselves to be handled and played with, without evincing any uneasiness.

At the request of the Chairman, Mr. Martin reported the morbid appearances observed in the *Lion* which recently died at the Society's Gardens. Before removing the skin, the whole of the body presented a remarkably bloated appearance, which was found on examination to be owing to general *emphysema*. This was suspected by Mr. Martin to be the result of morbid arterial secretion ; it could not have been caused by putrefaction, the animal having been dead but a few hours, and the body being still warm. The same appearance had been not unfrequently observed by Mr. Spooner, the Veterinary Surgeon of the establishment, in animals worn out by lingering chronic disease. On examining the lungs, their cellular structure was found completely obliterated, except in one small portion, where alone any oxygenation of the blood could have taken place. They presented a dark appearance on the surface, with a hardness or density of structure which must have resulted from long-continued inflammation. They were also partially studded with tubercles. On cutting into them, purulent matter oozed from the incision, and several abscesses, though not large, were discovered. The liver was dark, and so soft as to break down with the slightest touch. The spleen presented no decided trace of disease. The intestines adjacent to the liver were tinged with a dark and somewhat purplish hue ; but although distended with air presented nothing remarkable. The stomach contained only a little bile and *mucus*.

The muscles generally were pale and flabby, as might have been anticipated, where a chronic disease had wasted the vital energies, and where the blood, impeded in its passage through the lungs, had long ceased to be sufficiently oxygenated.

Mr. Owen commenced the reading of his account of the Myology of the *Simia Satyrus*, L. He confined himself to the notice of such muscles as are peculiar to that animal, and have not any analogues in the human frame ; of those which, if analogous, deviate remarkably in their proportions and attachments ; and lastly, of such as have been considered as of doubtful existence in the *Orang*.

The *occipito-frontalis*, which escaped the observation of Tyson and Dr. Traill (Wernerian Trans. iii.) in the *Chimpanzee*, and which some physiologists have asserted to be peculiar to man, is distinctly developed in the *Orang Utan*. Portions of this muscle were also found on the head of a *Chimpanzee* that had been flayed with great care, the rest having been removed with the scalp, to which the tendinous part closely adheres.

The following muscles of the face were described, *corrugator supercilii*, *levator labii superioris alæque nasi*, *levator anguli oris*, *zygomaticus major*, *depressor anguli oris*, *orbicularis palpebrarum* and *orbicularis oris*.' On reflecting the inner membrane of the lips, the *depressores labii superioris* and *levatores labii inferioris* were found of considerable breadth and strongly developed : their action in protruding the lips in a conical form has been frequently noticed by those who have had opportunities of observing the living animal.

The *platysma myoides* is of greater extent than in the human subject, and some of the fibres have a different direction, bearing a resemblance to the cervical portion of the *panniculus carnosus* in some quadrupeds, as the *Beaver* and *Guinea-pig*.

The muscles of mastication, and the articulation of the lower jaw were described.

The *digastricus* has not any connection with the *os hyoides*, the anterior fleshy portion being altogether wanting in the *Orang Utan*. It is inserted by a strong round tendon into the angle of the lower jaw. This circumstance is interesting in connection with the memorable dispute between Dr. Monro (primus) and the French anatomists, concerning the actions of this muscle; and it is remarkable that Winslow, with his accustomed ingenuity, should have alluded to such a disposition, in illustrating his opinions of the actions of the *digastricus* on the lower jaw in the human subject. Some peculiarities in the *mylo-hyoideus*, *genio-hyoideus*, and *omo-hyoideus* were noticed.

The peculiar muscle discovered by Tyson in the *Chimpanzee*, and called by him *levator claviculæ*, arises in the *Orang Utan* from the *occiput* and transverse process of the *atlas*. In the *Chimpanzee* which Mr. Owen dissected, he also found it arising from the transverse process of the *atlas*, and not from the second or third cervical *vertebra*. It is inserted broadly into the humeral extremity of the clavicle.

Neither in the *Orang Utan* nor in the *Chimpanzee* is there any true *ligamentum nuchæ*. The part commonly so called in the human subject, consisting also in these animals only of the inelastic commissural tendons of the *trapezii*, the *rhomboidei* and the *serrati postici superiores*. To give additional support, however, to the head of the *Orang Utan*, which preponderates so far anterior to the occipital *foramen*, the origins of the *rhomboidei* are extended upwards to the occipital bone, to which they broadly adhere, beneath the *trapezii*. In the *Chimpanzee* this disposition does not occur, but in both animals the *rhomboideus* is a single muscle, without division into a greater and lesser portion.

Three muscles supply the place of the *pectoralis major* in the *Orang Utan*. Their proportions and attachments were minutely described; and while speaking of these with reference to each other, it was found convenient to apply to them the names of *sterno-humeralis*, *costo-humeralis*, and *sterno-costo-humeralis*.

The reading of the remainder of this part of the anatomy of the *Orang Utan* was postponed to a future meeting of the Committee.

Several species of *Birds* belonging to the collection recently made by Capt. Philip P. King, R.N., during his survey of the Straits of Magellan, were exhibited. Other birds from the same collection had been named and characterized at the Meeting on the 14th of

December: and on the present occasion Capt. King pointed out the distinctive characters of the following species which he believed to be new.

SYNALLAXIS ANTHOÏDES. *Syn. supra brunnea, plumis in medio fusco latè striatis, tectricibus alarum superioribus rufo tinctis; subtus pallidè cinerea; rectricibus lateralibus ad marginem externum, fasciâque alarum, rufis.*

Statura *Syn. Spinicaudæ.*

DENDROCOLAPTES ALBO-GULARIS. *Dend. corpore supra abdominisque lateribus rufo-brunneis; remigibus secundariis, dorso imo, caudâque rufis; mandibulâ inferiori ad basin, gulâ, jugulo, pectore, abdomineque medio albis, hujus plumis brunneo ad apicem marginatis; rostro sursum recurvo.*

Longitudo circiter 7¼ uncias.

TROCHILUS FERNANDENSIS. *Troch. ferrugineo-rufus; capitis vertice splendenti-coccineo; remigibus fuscis.*

Longitudo 5 uncias. C'est la femelle du Stokesii.

Habitat in insulâ Juan Fernandez.

TROCHILUS STOKESII. *Troch. corpore supra viridi-splendente, subtus albo viridi-guttato; capite supra, guttisque confertis gulæ lazulino-splendentibus; remigibus fusco-atris; remigum omnium, mediis exceptis, pogoniis internis albis.* C'est le mâle.

Longitudo 4½ uncias.

Habitat in insulâ Juan Fernandez.

PHALACROCORAX IMPERIALIS. *Phal. capite cristato, collo posteriori, corporeque supra intensè purpureis; alis scapularibusque viridi-atris; remigibus rectricibusque duodecim fusco-atris; corpore subtus, fasciâ alarum, maculâque dorsi medii sericeo-albis; rostro nigro; pedibus flavescentibus.*

Statura *Phal. Carbonis.*

Habitat in sinubus interioribus oræ occidentalis.

PHALACROCORAX SARMIENTONUS. *Phal. capite, collo, dorsoque imo atro-purpureis; pectore abdomineque albis; dorso superiori, scapularibus, alisque viridi-atris; remigibus rectricibusque duodecim atris; gulâ, genis, femorumque tectricibus superioribus albo-notatis; rostro nigro; pedibus flavescentibus.*

Statura præcedentis.

Habitat in Freto Magellanico.

PHALACROCORAX ERYTHROPS. *Phal. capite, collo, corporeque supra purpureo-atris; pectore abdomineque albis; genis parcè albo-notatis; facie nudâ rubrâ; remigibus, rectricibus duodecim, rostroque sub-brevi atris: pedibus flavescentibus.*

Staturâ paulo minor præcedentibus duobus.

February 8, 1831.

N. A. Vigors, Esq. in the Chair.

It was announced that the Council had Resolved, "That the Meetings of the Committee are open to every Member of the Society." In this resolution the Committee cordially concurred; and also in the propriety of distributing cards of the Meetings to the Members of the Society residing in or near London.

The skeleton and parts of the *viscera* of one of the Society's specimens of the *Chinchilla*, (*Chinchilla lanigera*,) were exhibited, and the following notes by Mr. Yarrell were read.

"On the death of one of the specimens of this interesting little animal in the collection of the Zoological Society, the Museum, previously containing a preserved skin, was enriched with a skeleton and preparations of parts of the *viscera*. Of these additions I have been permitted to furnish a description, which I was the more desirous to do, as no notice of the internal parts of this animal has appeared, that I am aware of, except as far as regards its dentition; and on this part of the subject I was anxious to correct an error I had committed in a short notice published in the fourth volume of the 'Zoological Journal,' page 317, from the prescribed use of limited materials.

"It may be necessary to state that at the time of examination all the *viscera* had been preserved some months in a weak solution of spirit.

"The lungs are composed of three small lobes on each side. The heart is flattened in form from behind forwards, measuring $\frac{6}{10}$ths of an inch across its base, and but $\frac{4}{10}$ths in depth; the want of *apex* gives it a rounded and muscular appearance. The liver exhibits two large and equally-sized lobes, and two smaller lobes. The stomach, a single cavity, measures from the entrance of the *œsophagus* round the great curve to the pyloric contraction 5 inches $\frac{8}{10}$ths, the greatest breadth 2 inches $\frac{2}{10}$ths, the depth 1 inch $\frac{4}{10}$ths; the spleen is small and elongated. The length of the small intestines from the *pylorus* to the end of the *ilium* 3 feet 10 inches; the *cæcum* and first portion of the *colon* are of large size, made up of three half-circular convolutions, one central, with one of smaller dimensions on each outer side, containing numerous cells and divisions, strengthened by muscular bands and *septa*; the whole length of *cæcum*, *colon* and *rectum*, measures 4 feet 10 inches. With the exception of the *cæcum* and commencement of the *colon*, which as I have stated are voluminous, all the intestines are of very small calibre. The kidneys vary somewhat in shape; one measures $\frac{5}{10}$ths of an inch in length and $\frac{3}{10}$ths in breadth, that on the opposite side is much more spherical. The specimen is a female, and the uterine *cornua* measure each $3\frac{1}{2}$ inches in length.

"Of the skeleton, when mounted, the whole length from the nose to the end of the tail is 13 inches $\frac{6}{10}$ths; the upper surface of the *cranium* from the *occiput* to the inter-orbital space is in form triangular and flat, the width at the *occiput* 1 inch $\frac{1}{10}$th, of the inter-orbital space $\frac{4}{10}$ths, the whole length of the head 2 inches $\frac{2}{10}$ths, the mastoid processes and auditory cells of very large size, the external *meatus* also large, oval, directed upwards and backwards; the *zygoma* narrow and slender posteriorly, but deep and stronger at its junction with the malar bone, which has an ascending bony division between the orbits and temporal *fossæ*; the nasal bones narrow, convex, and of parallel diameter; the lower jaw is curved, broad and strong, the course of the *incisor* teeth is visible, and the alveolar cavities of the molar teeth are well defined externally; the coronoid processes are wanting, apparently as if broken off during the preparation of the skeleton, but have obviously been of very small size; the condyle elongated from before backwards, the plate deep, and the posterior angle of considerable length. Dentition $\frac{2}{2}\frac{-}{-}\frac{8}{8}$: the exposed portion of the *incisors* measures $\frac{4}{10}$ths of an inch in length; the molar teeth are all made up of three parallel portions or bony *laminæ*, each portion invested with a thin coat of enamel and closely united, the base of a molar tooth presenting six lines of enamel and three cavities; the anterior third of the first molar tooth on each side, above and below, is smaller than the other two portions, and gives to these teeth a triangular-shaped crown; the posterior third portion of the last molar tooth on each side above is nearly round, and gives an increase of surface to these also; in the molar teeth of the lower jaw the fold of enamel between the first and second portions of the bony *laminæ* of each tooth does not reach quite to the outer edge, and the two portions of bone appear therefore to be only partially separated. The direction of the parallel *laminæ* of all the molar teeth is not at right angles with the line of the maxillary bones, but inclining obliquely from without backwards.

"The length from the *atlas* to the end of the tail is 11 inches $\frac{4}{10}$ths; cervical *vertebræ* 7, dorsal 13, lumbar 6, sacral 2, and caudal 23. The *scapulæ* are small, measuring 1 inch from the external angle to the articulation with the *humerus*, the spine is but little elevated, the *acromion* ample, the clavicles perfect; length of the *humerus* 1 inch $\frac{2}{10}$ths, the bone strong and furnished with an elongated crest descending from the head; from the *olecranon* to the carpal articulation 1 inch $\frac{6}{10}$ths, the *ulna* and *radius* firmly anchylosed throughout the distal half of their length; thence to the end of the longest of the five toes $\frac{8}{10}$ths of an inch. The ribs 13 pairs. The bones of the *pelvis* slender and elongated; fromr the crest of the *ilium*, which is but little produced, to the inferior edge of the *ischium* is 1 inch $\frac{9}{10}$ths; the *ossa pubis*, slight in structure, advancing but little, the *symphysis* elongated, and the *obturator foramen* of large size. The *femur* is straight, strong and smooth, and measures 1 inch $\frac{8}{10}$ths; the *tibia* 2 inches $\frac{2}{10}$ths; the *fibula* is complete and forms the external *malleolus*; from the *os calcis* to the end of the longest toe 2 inches $\frac{1}{10}$th; the toes four in number, of which the outer one is the shortest, the third from the outside the longest, the second and fourth equal.

"In the published observations before referred to I stated that the *Chinchilla* appeared to be closely allied to Mr. Brookes's new genus *Lagostomus*, and the character of the skeleton of the *Chinchilla* compared with the figure and description of *Lagostomus* in the 1st part of the 16th volume of the 'Transactions of the Linnean Society' confirms the general similarity. Still, the more complicated structure of the teeth, and the existence of an additional toe on each of the feet, require for the *Chinchilla* the generic distinction claimed for it by Mr. Bennett and by Mr. Gray.

"The resemblance of the skeleton of the *Chinchilla* to that of the *Jerboa* is also remarkable, particularly in the form of the head, in the excessive development of the auditory cavities, and the small size of the anterior extremities compared with the hind legs."

Mr. Yarrell having concluded the reading of his Notes, it was remarked that MM. Isidore Geoffroy-Saint-Hilaire and Dessalines d'Orbigny had proposed, in the 'Annales des Sciences Naturelles' for November 1830, the creation of a new genus, *Callomys*, to include the *Chinchilla* and the *Viscaccia*. The latter animal is the *Dipus maximus*, De Bl., and consequently the type of the genus *Lagostomus*, described by Mr. Brookes in a paper read before the Linnean Society in 1828, and published in the Transactions of that body in 1829, in which the system of dentition and the osteology are treated of in detail. The *Chinchilla*, long known in commerce but only recently made known to science, was described as the type of a distinct genus, under its common name, by Mr. Bennett in 1829, and by Mr. Gray in August 1830: its true characters seem even now to be unknown to the French authors above referred to, who appear to be acquainted with its skin alone, and never to have examined either its teeth or the number of its toes. In these respects it deviates from the characters of their proposed genus; a genus which cannot be adopted, inasmuch as it is composed of heterogeneous materials, and as the two types included in it have both previously been described and designated as distinct groups.

Specimens were exhibited of the *tracheæ* of various *Gallinaceous Birds* included in the genera *Pauxi*, *Crax* and *Penelope* of M. Temminck; and Mr. Yarrell observed that these birds have each, as far as they have yet been examined, been found to possess a specific difference in their organs of voice. Among the *tracheæ* placed on the table was that of the *Red-knobbed Curassow*, *Crax Yarrellii*, Benn., a new species lately described from the Society's Menagerie, and which had recently died. The *trachea* of this species differs from all those previously known, but most resembles that of the

Crax Alector, L.; while in external characters the bird approaches the *Crax globicera*, L., from which it is distinguished by the redness of its cere and by a prominence on each side under the base of the lower jaw, in addition to the globose knob near the base of the upper. The tube in the *Crax Yarrellii* is straight throughout its whole length, except a short convolution imbedded in cellular membrane placed between the shafts of the *os furcatorium*. The *trachea* is narrow, and the fold, invested and supported by a membranous sheath, gives off one pair of muscles, which are inserted externally below the *apex* of the *os furcatorium*. The lower portion of the tube, immediately above the bone of divarication, sends off a pair of muscles to be inserted upon the *sternum*. The upper pair of muscles (furculo-tracheal) influence the length of the tube above the convolution. The inferior pair (sterno-tracheal) have the same power over the bronchial tubes and that portion of the *trachea* which is below the convolution.

Several specimens were laid on the table of a *Clupea* taken in the mouth of the Thames, which Mr. Yarrell regarded as distinct from the *common Herring* of our coasts, the *Clupea Harengus*, Linn. He dedicated it to Dr. Leach, who, he was informed, has often stated that the British coast possessed a second species of *Herring*. The *Clupea Leachii* is much deeper in proportion than the *common Herring*, an adult fish 8 inches long being 1 inch ⅞ths deep, while a *common Herring* of the same depth measures 10½ inches in length. The dorsal and abdominal lines of the new species are much more convex; the latter is keeled, but has no serration. The under jaw has three or four prominent teeth placed just within the angle formed by the *symphysis*: the upper *maxillæ* have their edges slightly crenated. The eye is large. The scales are smaller than in the other species, and there is no distinct lateral line. The back and sides are deep blue with green reflections, passing into silvery white beneath. The dorsal fin is placed behind the centre of gravity; but not so far behind it as in the *common Herring*. The number of the fin-rays and of the *vertebræ* differ in the two species as follows:

	D.	P.	V.	A.	C.	*Vertebræ.*
Clup. Harengus	17	14	9	14	20	56
Clup. Leachii	18	17	9	16	20	54

The new species differs also from the *common Herring* in flavour, being much more mild. It is now full of roe, while the adult *common Herrings* ceased spawning in November, and having retired subsequently to the deep waters are not at present to be met with on the southern coast. Mr. Yarrell added, that there was reason to believe that a third species of *Herring*, of a larger size than either of the others, occurred sometimes on our eastern coast. He also mentioned that he had obtained last summer from the Thames, the two *Shads* regarded by M. Cuvier as the *Clupea Alosa*, Linn., and the *Clupea fallax*, LaCép.

Mr. Yarrell stated that he had received a letter from Mr. Dillwyn, mentioning the capture in Swansea Bay of a specimen of the *Labrus maculatus*, Bloch; being a second instance of the occurrence of this fish on the British coasts within a few weeks.

Mr. Yarrell also stated that the *Summer Duck*, *Anas sponsa*, Linn., male and female, had been shot recently near Dorking. The *Anas occidua* had also occurred in this country: and another American and Northern species of bird, the *Alauda alpestris*, Linn.

The Chairman resumed the subject of the Himalayan birds, and exhibited and described the following species.

PHŒNICURA CŒRULEOCEPHALA. *Phœn. atra, abdomine strigâque alarum longitudinali albis; capite pallidè cœruleo.*

Statura *Phœn. communis.*

PHŒNICURA LEUCOCEPHALA. *Phœn. corpore apiceque caudæ atris; abdomine, crisso, uropygio, caudâque rufis; capite supra albo.*

Statura *Phœn. rubeculæ.*

PHŒNICURA RUBECULOÏDES. *Phœn. capite, collo, corporeque supra atro-cœruleis, capitis summo splendidiore; abdomine albo; pectore rufo.*

Statura *Phœn. cœruleocephalæ.*

PHŒNICURA FULIGINOSA. *Phœn. corpore fuliginoso-plumbeo; caudâ rufâ.*

Staturâ paullo major quam præcedens.

EMBERIZA CRISTATA. Mas. *Emb. capite cristato corporeque atris; alis caudâque rufis.*

Fœm., aut Mas jun.? *Capite subcristato corporeque fuscis, abdomine imo pallidiori; alis caudâque rufescentibus, fusco tinctis.*

Statura *Carduelis communis.*

LAMPROTORNIS SPILOPTERUS. Mas. *Lamp. supra plumbeo-canus, plumis ad apicem fusco marginatis; subtus albus, rufo tinctus; uropygio rufescenti; remigibus atris viridi splendentibus, maculâ albâ; caudâ brunneâ; gulâ intensè rufâ.*

Fœm. *Supra pallidè brunnea, subtus albescens, brunneo tincta.*

Statura *Lamp. cantoris.*

MYOPHONUS HORSFIELDII. *Myoph. cœrulescenti-ater, fronte, humeris, marginibusque plumarum pectoris splendidè cœruleis.*

Statura *Myoph. cyanei*, Horsf.

PHASIANUS STACEII. *Phas. stramineo-albus, supra frequenter, subtus parcè nigro fasciatus, dorso abdomineque imis rufescentibus; capite cristato fusco; caudâ fasciis latis nigris, ad basin internè rufis, ornatâ.*

Longitudo *corporis* ab apice rostri ad apicem caudæ, 3 pedes 4½ uncias.

OTIS NIGRICEPS. *Ot. corpore supra pallidè badio, rufo-brunneo graciliter undulato; collo, maculis parcis alarum, abdomineque albis; capite cristato, tectricibus alarum exterioribus, remigibus, notâque grandi pectorali nigris.*

Longitudo *corporis* ab apice rostri ad apicem caudæ, pedes 4; latitudo, 4½.

The Chairman also directed the attention of the Committee to a remarkable deficiency observable in some of the groups of the *Psittacidæ,* viz. the absence of the *os furcatorium.* This deficiency he had observed in the osteology of the *Psittacus mitratus*, the *Platycercus eximius*, and the *Psittacula galgula*; skeletons of the two last of which species were exhibited. He observed that this extraordinary deficiency evinced the approaching affinity of that group of birds to the *Rasores*, one of the most conspicuous groups of which, the typical *Struthionidæ*, exhibited a like deficiency, indicating a corresponding failure in the powers of flight.

February 22, 1831.

N. A. Vigors, Esq. in the Chair.

A specimen was exhibited of a young *Nyl-ghau*, (*Antilope picta*, Pall.,) which was born at the Society's Farm in January last. The mother of this individual had borne two young about twelve months since, while in the possession of His late Majesty. On the present occasion she had also borne two, one of which is still living. The differences between the young and the adult animal were pointed out. The latter is well known. The former is generally of a dull reddish fawn colour, which is brighter on the lower part of the legs. A line along the belly, descending a short distance down the inside of the legs, together with a line on the fore part of the hock, is white. The under lip, a line along its under surface, and a crescent-shaped spot mounting on each side round the base of the lower jaw, are also white. A spot above the front of the eye, and one behind the angle of the mouth are white, as are also the inside of the ears. A black line passes along the middle of the nose, and spreading out between the eyes, becomes suffused and lost. From between the ears a black line passes along the middle of the back to the root of the tail. A black line passes down the front of the fore legs, commencing near their upper part, expanding in front of the knees, then contracting, and afterwards dilating again above the base of the hoof, which it surrounds. Above the pastern on the inner side is a white spot; and there is a white spot just above the hoofs both on the outer and inner side. On the front of the lower part of the hinder legs there is a black line, and the pastern and feet are black. Above the pastern the limb is surrounded in front by a broad half ring of white; and there are two white spots, nearly uniting in front, above the hoofs. The ears at their base for more than half their length, together with their extreme tip, are of the general fawn of the body becoming much lighter towards their outer margin: but a broad black blotch occupies nearly their upper half, with the exception of the extreme tip. The tail is white beneath, and its tip is black.

Mr. Cox adverted to the prevalence among *Sheep* of *prolapsus uteri*, which he stated to be almost universally fatal to the animals afflicted with it, and for the relief of which he pointed out a simple and efficient method. In a sheep suffering from this cause he removed the protruded parts by the application of a ligature; the animal was subsequently turned out to grass, and became as healthy and as fat as any of the flock with which it was associated. Mr. Brookes stated that *prolapsus* is equally frequent in some other animals, and gave the history of a case in which profuse and almost fatal hæmorrhage ensued from cutting away the displaced parts: he fully agreed in the propriety of removing them by ligature.

Mr. Bennett called the attention of the Committee to one of the *Spider-Monkeys*, (*Ateles*, Geoff.,) at present living in the Society's Garden, which he regarded as a new species. He named and characterized it as the

ATELES FRONTALIS. *At. ater, maculâ frontali semilunari albâ.* Statura *At. atri*, F. Cuv.

By the white patch on the forehead and the radiation of the hair from the back of the neck, this monkey approaches the *At. hybridus*, described in the 'Dictionnaire Classique d'Histoire Naturelle,' by M. Isidore Geoffroy-Saint Hilaire. In the latter, however, the colours of the body are varied and generally light, the darkest tint which is mentioned as occurring on the specimen described being the pure brown of the head and anterior limbs. In the Society's individual, on the contrary, the whole of the hairs, with the exception of the frontal patch, are jet black: the naked parts of the skin are also black, except a flesh-coloured space on the face including the eyes, nose, and lips. It has been suspected that as the lighter-coloured species of *Ateles* advance in age they acquire the black which is so generally prevalent in the group; but this change of colour yet remains to be proved.

Some notes by Mr. Yarrell of an examination of the body of the *lesser American Flying-Squirrel*, (*Pteromys volucella*, Cuv.,) were read. The individual examined had lived in the Society's Collection for upwards of a year.

The pectoral muscles, and also the muscles of all the limbs were well marked and of large size; the clavicles perfect; and the general character of the bones similar to that of the *Squirrels*. The heart was comparatively large, and the lungs were formed of two unequally sized lobes on each side, bearing evident marks of inflammation; the chest was capacious, the diaphragm being situated very low down, and dividing the body into two nearly equal cavities. The liver was composed of six lobes, varying in size, deeply divided, and placed three on each side; the gall-bladder was small, elongated, and collapsed. The stomach in form and position resembled that of the *Squirrel*; it was triangular, the *apex* forming the pyloric portion; the breadth $1\frac{1}{10}$th of an inch, and 1 inch in depth. The length of the small intestines was $19\frac{1}{2}$ inches; the *cæcum* 1 inch; the *colon* and *rectum* 7 inches; the *cæcum* also resembled that of our *Squirrel* in form, but the membrane connecting its inner surface being more free, the *cæcum* was less curved upon itself. The kidneys measured each $\frac{5}{10}$ths of an inch in length by $\frac{3}{10}$ths in breadth; they were inflamed; and both ureters were also diseased and enlarged. The subject was a female, and the uterine *cornua* measured each 1 inch in length. The whole length of the intestinal canal was 28 inches; the length of the animal from the nose to the origin of the tail $4\frac{1}{2}$ inches.

The stomach, *cæcum*, and portions of the skeleton were laid on the table. Mr. Brookes remarked that the cartilage which, passing from the *carpus*, affords support to the volitant membrane in the *Flying-Squirrels*, is found in all the *Pteromyes* and *Sciuropteri*; but that it does not exist in *Galeopithecus*.

One of the specimens of *Suricate* (*Ryzæna tetradactyla*, Illig.), which were exhibited to the Committee on the 25th January, having died, the following notes respecting its anatomy were read by Mr. Owen.

"The specimen was a female, and measured, from the end of the snout to the vent, 11 inches. On opening the body it was observed that the bile had exuded through the *peritoneum*, and had stained the ensiform cartilage close to which the *fundus* of the gall-bladder lay. The *viscera* of the *abdomen* presented a beautiful appearance when exposed; the liver occupied the hypochondriac and epigastric regions; below this appeared the stomach with its vessels injected, and along the convexity of this organ the spleen swept across the *abdomen* from the left to the right lumbar region; the convoluted intestines occupying the lower part.

"The *œsophagus* has a course of about half an inch in the *abdomen*, and enters the stomach half an inch from the left extremity of that *viscus*. The stomach is of a full oval shape, without any contraction in the middle, and retaining the same circumference to very near the *pylorus*: its longitudinal diameter is 2 inches; its depth 1 inch 10 lines. There is a large *omentum*, broadly attached to the stomach and spleen, which was hidden among the convolutions of the small intestines. The *duodenum* makes a large curve at the right side of the *abdomen*, is a loose intestine throughout its whole course, having a *mesoduodenum* which becomes shorter as it approaches the spine at the lower part of its curve; it is continued into the *jejunum* before it crosses the spine. The small intestine then descends into the left iliac region, makes a sudden turn upwards, and after a few convolutions again at the lower part of the *abdomen*, terminates in the *cæcum* which is situated in the left lumbar region just above the left kidney. The circumference of the small intestines is nearly the same throughout their course, viz. 1 inch; their length 3 feet 2 inches.

"The *cæcum* is nearly an inch in length, with a rounded extremity, and rather contracted at its commencement; but its position and direction are the reverse of the *cæcum* in the human subject, having the blind end pointing to the diaphragm, and lying, as in birds, by the side of the small intestine, and in the direction of the large intestine, which is continued almost straight down to the *anus*. There is not any natural division into *colon* or *rectum*, the large intestine being without longitudinal bands or *sacculi*, and measuring in length only six inches. The circumference is rather more than that of the small intestines.

"The liver is tripartite, with a *lobulus Spigelii*; the right division is bilobed; the middle division has three lobes, with the gall bladder lodged deep in the right fissure, and the coronary ligament in the left; the left division is entire. The gall-bladder is large; it had an irregularly contracted surface. The *ductus choledochus* enters the *duodenum* half an inch from the *pylorus*.

" The *pancreas* has a singular form. A thick transverse portion extends from the spleen behind the stomach to the *pylorus*; it then divides and forms a circle, which lies in the concavity of the great curve of the *duodenum*; sending off one or two processes in the *mesoduodenum*.

" The spleen is a flat elongated body, four inches in length, about an inch in breadth, with the margins irregularly notched; one of these is thicker than the other, so as to give it the appearance of a three-sided body. Two large veins go from it to the *vena portæ*; on inflating these, the whole substance rose and became turgid, appearing to be little else than a receptacle for venous blood.

" The kidneys are small oval bodies, having the veins partly ramifying on their exterior, as in the *Civet*, the *Genette*, and the *Cats*.

" The lungs have three lobes on the left side and four on the right, one of which lies in the mesial line behind and below the heart. This single lobe, which is very general in the *Mammalia*, has considerable analogy with the *lobulus Spigelii* of the liver.

" The heart is oblong, with a round obtuse *apex*. The left brachial vein joins the superior *cava*; the arch of the *aorta* gives off the two carotid arteries and the right brachial by a common trunk, then the left brachial artery.

" The rings of the *trachea* are regular and of uniform size, incomplete behind, in number thirty-six. The arytenoid cartilages have thin elevated *apices*. The sides of the *epiglottis* extend backwards as far as the cricoid cartilage, and it arches over the *rima glottidis* like a penthouse or shed. The thyroid gland consists of detached lobes lying below the *larynx*, in the interspace of the *œsophagus* and *trachea*.

" The tongue measures one inch and eight lines; it becomes gradually thinner to the tip, which is neatly rounded. The horny *papillæ* are principally collected in three groups, one near the *apex*, and one on either side near the middle of the tongue.

" The *œsophagus* has longitudinal *rugæ* internally.

" The parts of generation showed, by their vascular condition, evident traces of recent excitement: this individual, indeed, had been observed to receive the advances of the male a short time previous to her death; but there was no visible proof of impregnation having taken place. The *vagina* had longitudinal *rugæ* on its inner aspect; the *urethra* opened close to the external aperture, within a small fold of membrane, but without any appearance of *clitoris*. From the *os tincæ* to the commencement of the *cornua uteri* was half an inch; the *cornua* were an inch in length; the fold of *peritoneum*, or broad ligament, was continued from them as high as the upper part of the kidneys. The fallopian tubes made a turn round the ovaries, their extremities being closely attached to the capsules of these glands. The ovaries themselves were small oval bodies, being about three lines in the long diameter, and were surrounded by a small capsule of *peritoneum;* I observed on one part a small dark coloured speck, which was probably a *corpus luteum.*

"Two small glandular follicles open on either side of the orifice of the *urethra*, and two larger spherical bags open at the verge of the *anus;* these were filled with a white unctuous secretion, which had a faint odour, like the ordinary secretions of *glandulæ odoriferæ*. The quantity of this secretion probably had reference to the condition of the sexual organs before alluded to.

"The principal morbid appearances were in the lungs. They were of a dark livid colour, and in a state almost approaching to hepatization. Hurried and impeded respiration was the principal symptom noticed before death. The stomach and small intestines betrayed traces of inordinate vascular action.

"In the structure of the alimentary canal, especially of the *cæcum*, and in the remarkable shortness of the large intestines, this animal has a close affinity with the *Civet* and *Genette*, as well as in the structure of the kidneys as before mentioned. The inferior surface of the *tarsus* is destitute of hair, as in many of the *Viverridæ*, in the true plantigrade *Mammalia*, and in the *Kangaroo;* like the latter animal, the *Suricate* is in the habit of assuming the upright position, resting on the *tarsus*. It is carnivorous, and while in confinement, manifested great agitation at the sight of small birds."

In conclusion, Mr. Owen remarked, that the appearances which he had noticed, agreed with the description of the *viscera* of the animal, as recorded by Daubenton, so far as that distinguished comparative anatomist had observed them.

The Chairman exhibited a collection of Birds which had been made in the Island of Mauritius by Mr. Telfair, an active and well known Corresponding Member of the Society. They had been consigned to Mr. Barclay of Bury Hill in Surrey, who had presented them to the Society. Several species were of interest, as being confined to the Island and its immediate vicinity, and being uncommon in European collections: and others, although found in Europe, as affording some facts respecting the geographical range of species. Mr. Vigors proposed to lay a catalogue of the collection before the Committee at an early Meeting; and on the present occasion named and characterized the following apparently new species of *Spoonbill.*

PLATALEA TELFAIRII. *Plat. corpore unicolore albo, rosaceo leviter tincto; regione circa rostrum, mandibulâ superiori, pedibusque rubris; mandibulâ inferiori nigrescenti, basi flavâ.*

Longitudo *corporis* a mandibulæ basi ad apicem caudæ, 25½; *rostri*, 8; *alæ* a carpo ad apicem remigis 2dæ, 16; *tarsi*, 6; *caudæ*, 6.

The Chairman again resumed the exhibition of the Himalayan birds; and calling the attention of the Committee to the number of species now known to belong to the genus *Lanius* as restricted by modern authors, and to the expediency of subdividing the group according to the modifications of form exhibited in the wings and tail, proposed the following characters as separating the two genera.

Lanius.

Rostrum longitudine mediocre, robustum, compressum, ad basin rectum, ad apicem curvatum, mandibulæ superioris tomiis fortiter emarginatis, dentem conspicuum exhibentibus; *naribus* basalibus, lateralibus, ferè rotundatis, membranâ partim tectis; *rictu* setis rigidis munito.

Pedes mediocres; *digitis* liberis; *acrotarsiis* latè scutellatis.

Alæ subacuminatæ, subbreves; remige primâ brevissimâ, tertiâ longissimâ, cæteris gradatim decrescentibus.

Cauda brevis, æqualis aut subrotundata.

Typus genericus, *Lanius Collurio*, Linn.

Collurio.

*Rostrum pedes*que ut in genere *Lanio*.

Alæ subrotundatæ, breves; remige primâ brevi, secundâ sequentibus paullo breviore, tertiâ quartâ et quintâ ferè æqualibus longissimis.

Cauda elongata, gradata.

Typus genericus, *Lanius Excubitor*, Linn.

To the latter group the following Himalayan species belong.

Collurio Hardwickii. *Coll. capitis parte anteriore, strigâ per oculos ad collum extendente, alis, caudâque nigris; capitis vertice, corpore infra, maculâ mediâ alarum, caudæ tectricibus, rectricibus duabus lateralibus, cæterarumque, quatuor mediis exceptis, basi apiceque albis; occipite, nuchâ, dorsoque imo albescenti-griseis; dorso medio lateribusque abdominis ferrugineis.*

*Rostrum pedes*que nigri. *Caput* supernè albo nigroque colore in duas ferè partes transversim divisum. Longitudo *corporis*, 8; *alæ* a carpo ad remigem 3tiam, 3½; *rostri*, ¾; *tarsi*, ⅞; *caudæ*, 3¾.

Bay-backed Shrike, *Lath.? Gen. Hist. vol.* 11. *p.* 13. *sp.* 6.

This bird appears to be the same as that referred to in Dr. Latham's work, the description of which is taken from one of the drawings of General Hardwicke, to whom the species is inscribed.

Collurio erythronotus. *Coll. strigâ frontali per oculos ad medium colli extendente, alis, rectricibusque quatuor mediis nigris; capite supra, nuchâ, dorso superiori, rectricibusque lateralibus pallidè cinereis; corpore infra, alarum maculâ mediâ, remigum interiorum apicibus, rectricum lateralium marginibus omniumque apicibus, albis; scapularibus, dorso imo, abdominisque lateribus ferrugineis.*

*Rostrum pedes*que nigri, illius mandibulâ inferiori ad basin flavescenti. *Striga* per oculos nigra, supra graciliter albo marginata. *Tectrices* alarum inferiores albæ. Longitudo *corporis*, 10⅓; *alæ* a carpo ad apicem remigis 3tiæ, 3¾; *rostri*, ⅞; *tarsi*, 1⅛; *caudæ*, 4½.

This bird was observed to bear a great resemblance to the description of the *grey-backed Shrike* of Dr. Latham, (*Gen. Hist. vol. ii. p.* 9. *sp.* 3.) but to differ from it in the colours of the lesser wing-coverts and tail; the former being all black in the Himalayan species, and blue-grey, ending in pale rufous in Dr. Latham's, while the tail in the former species had four black middle feathers and the rest cinereous, but in the latter had the two middle ones only black, the rest being white. In a group exhibiting so much similarity in the disposition of the colours as the present, such differences are material as distinguishing species.

COLLURIO TEPHRONOTUS. *Coll. fasciâ frontali pergracili ad medium colli per oculos latiùs extendente nigrâ; capite, nuchâ, scapularibus, dorsoque saturatiùs cinereis; collo anteriori pectoreque albescentibus, hoc fusco graciliter fasciato; abdomine crissoque ferrugineis; alis caudâque brunneo-fuscis, apicibus pallidioribus; dorso imo tectricibusque caudæ superioribus subrufescentibus.*

Tectrices alarum inferiores ferrugineo fuscoque notatæ. Statura paullo minor quàm in specie præcedenti.

This bird also was observed to be closely allied to the last, and to differ from it probably only in sex or age. Until such points however could be ascertained, it was considered adviseable to regard it as specifically distinct.

Another interesting modification of form was exhibited among the *Shrikes*, in which the forked tail, acuminated wing, and short and feeble legs of the birds allied to *Dicrurus* appeared united to the head and bill of some of the *Stares*, particularly the genus *Pastor*. Mr. Vigors characterized the form under the generic name of

HYPSIPETES.

Rostrum subelongatum, debile, parum curvatum, apice leviter emarginatum; *naribus* basalibus, lateralibus, longitudinalibus, membranâ partim clausis; *rictûs* setis paucis, parum rigidis.

Alæ subelongatæ, subacuminatæ; remige primâ brevi, secundâ longiori septimæ æquali, tertiâ et sextâ æqualibus, quartâ et quintâ æqualibus longissimis.

Pedes brevissimi, debiliores; *acrotarsiis* scutellatis.

Cauda subelongata, forficata, rectricibus extrorsum spectantibus.

HYPSIPETES PSAROÏDES. *Hyps. capite supra subcristato, remigum apicibus, rectricibusque nigris; corpore alisque cineraceo-griseis; abdomine imo crissoque pallidioribus.*

*Rostrum pedes*que flavi. *Tectricum* alarum *remigum*que pogonia interna fusca. *Tectrices* alarum inferiores cineraceo-griseæ. Longitudo *corporis*, $11\frac{1}{2}$; *alæ* a carpo ad apicem remigis 3tiæ, 5; *rostri* 1; *tarsi*, $\frac{5}{8}$; *caudæ*, $4\frac{1}{4}$.

The following species were also exhibited and described.

MUSCIPETA BREVIROSTRIS. Mas. *Musc. capite, collo, nuchâ, dorso superiori, alis, rectricibusque mediis splendenti-nigris; corpore infra, dorso imo, pteromatum apicibus, fasciâ remigum, rectricibusque lateralibus splendidè coccineis; rostro brevi, subdebili.*

Fœm.? *Fronte, corpore infra, dorso imo, fasciâ alarum, rectricibusque lateralibus flavis; capite, nuchâ, scapularibus, dorsoque superiori griseis; alis rectricibusque mediis nigris.*

Longitudo *corporis*, $8\frac{1}{2}$; *alæ*, $3\frac{1}{2}$; *rostri*, $\frac{7}{16}$; *tarsi*, $\frac{5}{8}$; *caudæ*, 4.

CARDUELIS SPINOÏDES. Mas. *Card. fronte, occipite, collo corporeque infra, ptilis, pteromatum apicibus, fasciâ remigum, rectricumque lateralium basibus flavis; capite supra dorsoque olivaceis; alis caudâque fuscescenti-nigris.*

Fœm.? *Coloribus minùs saturatis; abdomine dorsoque olivaceo-fusco striatis.*

Statura paulò major quàm *Card. Spini.*

PICUS AURICEPS. Mas. *Pic. capite supra aureo; occipite, abdomine imo, crissoque coccineis; colli parte posteriori et strigâ utrinque laterali, corporeque supra nigris; colli parte frontali et lateribus, corporeque infra albis, hoc nigro striato; scapularibus, pteromatibus, remigibus, rectricibusque lateralibus albo-maculatis; dorso medio griseo, albo nigroque fasciato.*

Fœm. *Sine notâ coccineâ occipitali.*

Statura *Pic. medii.*

PICUS PYGMÆUS. Mas. *Pic. capite supra dorsoque medio griseo-canis, hoc albo nigroque fasciato; strigâ utrinque per oculos ad nucham extendente, gulâ, maculisque pteromatum remigum et rectricum lateralium albis; pectore abdomineque albescentibus, fusco graciliter striatis; notâ longitudinali gracili utrinque post oculos coccineâ.*

Fœm. *Sine notâ coccineâ postoculari.*

Statura minor quam *Pic. minoris.*

The male exhibited of this species was observed to have the two middle tail feathers elongated beyond the rest, and the lateral feathers were shown to be altogether soft and flexible, like those of the genus *Picumnus*, Temm.

CINNYRIS GOULDIÆ. *Cinn. capite supra, gulâ colloque in fronte, regione auriculari, strigâ utrinque gracili ad latera colli usque ad humeros extendente, uropygio, caudæ tectricibus, rectricibusque duabus mediis elongatis purpureo et cœruleo metallicè splendentibus; capitis lateribus, occipite, nuchâ, scapularibus, dorso summo, ptilisque sanguineo-rubris; dorso imo, pectore, abdomineque sulphureis, his sanguineo sparsis; remigibus rectricibusque lateralibus fuscis.*

Longitudo circiter 5 uncias.

Mr. Vigors expressed the pleasure which he felt in dedicating this species to the accomplished artist, Mrs. Gould, who executed the plates of these Himalayan birds.

March 8, 1831.

Sir Thomas Phillipps, Bart. in the Chair.

The Report on the animals for the importation of which the Council should be recommended to take measures (prepared in pursuance of a Resolution of the Committee, Jan. 11.), was presented and read by Mr. Vigors. It was directed that it should be suspended in the Meeting Room for the consideration of the Members of the Committee until the next Meeting, to which it should be again submitted, and its adoption be recommended.

An extract was read from the 'Lecture faite à la 1ère Séance Annuelle de la Société d'Histoire Naturelle de l'Isle Maurice, 24 Aout, 1830, par M. Julien Desjardins, Sécretaire de la Société,' a manuscript copy of which had been transmitted by that Society.

The zoological labours of the Mauritius Natural History Society have, during the first year of its existence, embraced numerous departments of animated nature.

The *Mammalia* of the island have been treated of by M. J. Desjardins. They are twenty-six in number, of which twelve only exist in the wild state. These are enumerated as the *Simia Aygula*, L.; *Pteropus vulgaris*; *Pter. rubricollis*, Geoff.; *Nyctinomus acetabulosus*, Geoff.; *Taphozous Mauritianus*, Geoff.; *Erinaceus setosus*, L.; *Sorex Indicus*, Geoff.; *Mus Rattus*, L.; *Mus Musculus*, L.; *Lepus nigricollis*; *Sus scrofa*, L.; and *Cervus Elaphus*, L.

Various *Birds* of Mauritius have been brought before the Society, including the *Fulica Chloropus*, L.; the *Numenius Madagascariensis*, Briss.; and a *Snipe*, known in the island as the *Cul blanc*. To the latter M. L. Desjardins has given, with some doubts, the name of *Scolopax Mauritiana*.

Several birds from Madagascar have also occupied the attention of the Society, and M. J. Desjardins has identified them as follows: two species of *Falco*, Cuv.; *Strix flammea*, L.; *Loxia Madagascariensis*, L.; *Corvus Dauricus*, Lath.; a species of *Regulus*, Cuv.; *Cuculus canorus*, L.; *Tetrao Coturnix*, L.; *Scopus Umbretta*; *Rallus Madagascariensis*, n. s.; *Fulica Chloropus*, L.; *Fulica cristata*, Gmel.; *Scolopax Capensis*, L.; *Colymbus minor*, L.; and four species of the genus *Anas*, L.

There are very few *Reptiles* met with on the island. An instance has occurred of the discovery of a living *Snake*, the second within the memory of the inhabitants. It was the *Coluber rufus*, LaCép.; and had probably been brought from India in some ship. The earlier travellers speak of the existence of *Tortoises*, but none are now found. M. J. Desjardins has, however, discovered three deposits of the remains of these animals, all of which are evidently of modern date, their age not exceeding two or three centuries. There are two

Saurian Reptiles, which, although common, remained undescribed until M. L. Desjardins gave to them the names of *Scincus Telfairii* and *Scinc. Bojerii:* he has also described a third, smaller and much more uncommon than the others, the *Scinc. Boutonii.*

Three new species of *Fishes* have been described and figured by M. T. Delisse. They are a *Heniochus*, Cuv.; a *Holacanthus*, Cuv.; and an *Ophidium*, L.

In *invertebrated animals*, especially those which inhabit the sea, Mauritius is rich. Among the *Annelida*, M. Liénard, sen. has described an *Amphitrite*, which he believes to be new: he has also described the *Amph. voluticornis* and *Amph. splendida*, Lam., together with three new species, the *Amph. fuscata*, *albicans*, and *tricolor*. A lacustrine *Erpobdella* has been described by M. L. Desjardins, who has preserved to it the trivial name of *sex-lineata*, doubtingly given by MM. Quoy and Gaimard. Three new species of *Crustacea*, of the genera *Lupa*, *Plagusia*, and *Cancer*, have been described by M. Liénard, jun.: and M. De Lisse, sen., has proposed to regard as the type of a new genus the *Homard sans cornes* of the fishermen; to this group he gives the name of *Scyllibacus*, and places it between *Scyllarus*, Fab. and *Ibacus*, Pér. The species is named *Scyllibacus orientalis*. Many *Insects* have been exhibited at the meetings of the Society, and M. J. Desjardins has read a description and history of the metamorphoses of the *Coccinella sulphurea*, Oliv. Among the *Cirrhipeda* a new species of *Pentalasmis*, allied to *Pent. striata*, Leach, has been described by M. Desjardins under the name of *Anatifa Mauritiana*.

The *Radiata* which have been described, are a species of *Fistularia*, Lam., and a new species of *Cephea*, the *Ceph. lamellosa*, so named by M. Liénard, jun. on account of the foliaceous *lamellæ* which cover the under surface of its arms.

Among the *Mollusca*, six species of *Doris* have been described by M. Liénard, sen., to one of which, regarded by him as new, he has given the name of *Dor. marginata*. The same gentleman has also described a *Pleurobranchus*. M. Liénard, jun. has described another species of *Doris*, and has given a description of a *Dolabella*, with an account of its anatomy.

Such is a brief outline of the zoological labours of the Mauritius Natural History Society, which within the short period of its existence has received no less than fifty memoirs, descriptions, and notices on different branches of natural science.

At the request of the Chairman, Mr. Martin read his notes of the dissection of a specimen of the *Testudo Indica*, L., which recently died at the Society's Gardens.

The animal was of large size, although considerably less than one formerly in the possession of the Society, the dissection of which, by Mr. Yarrell, has been published in the Zoological Journal. The *carapace* or dorsal shell measured 2 feet 11 inches in length, and the *plastron* or ventral shell 2 feet 4 inches. The breadth was 1 foot 9 inches.

The length of the stomach was 2 feet; the circumference in the largest part 1 foot 3 inches; its shape a flattened oval, contracting gradually towards the *pylorus*. On opening it, the coats, and especially the middle or muscular, were found extremely thick and firm, and increasing in thickness towards the *pylorus*, which protruded in a singular manner, to the distance of nearly an inch into the *duodenum*, at which part a few longitudinal *rugæ* were observed, the rest of the lining membrane being perfectly smooth. It contained a little fluid only. The liver presented nothing remarkable; it consisted of two principal lobes, in the right of which the gall-bladder was buried, so as just to show itself; the length of the gall-bladder was 2 inches.

The small intestines were thick and firm, their length being 3 feet 6 inches. The gall-duct enters the *duodenum* 3 inches, and the pancreatic duct 10 inches, below the pyloric orifice. On laying open the small intestines, their lining membrane appeared corrugated with numerous longitudinal *rugæ*, and they were found perfectly empty.

The large intestines were smooth on their internal surface, and filled with an immense mass of condensed vegetable matter, which was green and fibrous, and appeared to have only partially undergone the process of digestion. In the *colon* near the entrance of the small intestines were two or three small black patches, seemingly gangrenous. There was no *cæcum*. The circumference of the *colon* measured 9 inches. The length of the large intestines was 6 feet 8 inches, exclusive of the *cloaca*, which was 1 foot.

At the lower part of the *abdomen*, (in a singular cavity, formed by a diaphragm-like expansion of *peritoneum*, from which, to the opposite or extreme side, passed numerous bands, bearing a resemblance to the *chordæ tendineæ*,) the urinary bladder, of enormous capacity, was lying loose, irregularly folded, but containing a considerable quantity of viscid fluid: its *parietes* were thin, but very fibrous in texture. When moderately distended with air, its shape was made manifest, as trilobed, or rather, as consisting of one large central bag, from each side of which, a conical process jutted out; the extent from point to point being 1 foot 10 inches. It opened by a neck of about 3 inches in length, and closely invested with lung, into the *cloaca*, about 6 inches from its termination; the *penis* was long and deeply furrowed, and the *glans* large at the base, with a pointed *apex*.

The lungs were very florid in colour, and extremely light, spongy, and cellular, the cells being large and distinct. They extended the whole length of the *carapace*.

The kidneys were situated at the back of the *abdomen*, in shape oval; flat on one side, convex on the other; about 5 inches long, 2½ inches broad, and consisting of numerous lobes, which gave to their surface a furrowed or brain-like appearance; the relative proportion of the venous ramification in them was found to exceed that of the arterial.

As regards the death of the animal, nothing positive could be determined; but it appeared to Mr. Martin, from the black patches about the *colon*, and the quantity of undigested matter in the large intestines, to have resulted principally from an unnatural accumulation of fæcal matter, and the attending evil consequences.

March 22, 1831.

Joshua Brookes, Esq. in the Chair.

The Report on the animals for the importation of which the Council should be recommended to take measures, was again brought under the consideration of the Committee, and was adopted.

A Report from Mr. Miller, the Superintendent of the Society's Gardens, was read, explanatory of the circumstances attending the birth of the *Armadillos*. On the morning of the 1st February it was discovered that the female had made a nest of straw, close up to the pipe that conveys the warm water round the building, and had brought forth two young, which were quite blind, and measured about four inches from the head to the tail. The male was immediately removed to another cage, but it was supposed that he had injured one of the young ones on the head before they were discovered, of which hurt it died on the following morning. At that time the other young one seemed to be perfectly well, and was sucking; but it also was found dead on the morning of the 3rd of February. It was bitten on several parts of the head by the mother. It is probable that the injuries were inflicted by her in consequence of her young ones having been moved about; and measures have been adopted to prevent the recurrence of such disturbance on any future occasion.

The following notes on the *Ctenodactylus Massonii*, Gray, were read by Mr. Yarrell:—

"The death of two examples of an interesting little animal from Barbary, very similar to the *Lemmings* in external appearance, has enabled me to place before the Committee some particulars of structure and anatomy which possess considerable novelty. The subjects themselves were presented to the Society by Hanmer Warrington, Esq., British Consul at Tripoli, a Corresponding Member of this Society, and one of its most liberal donors.

"From two preserved skins of the same species, in the collection at the British Museum, Mr. Gray, in his 'Spicilegia Zoologica,' has lately published an account of this animal, under the name of *Ctenodactylus Massonii*. These specimens were received from the Cape of Good Hope, and were considered new to science. There is reason however to believe, as suggested by Mr. Ogilby, that all the four specimens may be considered identical with the *Mus Gundi* of Rothman, on whose description is founded the *Arctomys Gundi* of Gmelin and other writers, and the *Gundi Marmot* of Pennant's Zoology, vol. ii. p. 137: Rothman's short description coincides with the animal in question, and he states that his species inhabits Barbary, towards Mount Atlas, near Massufin.

"The resources of the Society furnish the following additional particulars:—

" The length of the animal from the nose to the origin of the tail is eight inches; of the tail itself, one inch. The general external resemblance to the well-known *Lemmings* has been noticed, but these examples have but four toes on each foot, with one small naked pad under each toe: the two middle toes are the longest and equal, the outer toe the shortest, the inner toe intermediate in length, and on the hind feet of remarkable structure.

" Immediately above a short curved nail there is a transverse row of horny points forming a pectinated apparatus; above this is a second parallel row of stiff white bristles; and over this, a third row of bristles, which are much longer and more flexible: there are thus three distinct parallel rows of points of unequal firmness. The toe next the inner one has two small fleshy tubercles above the nail, covered by two rows of bristles, the under one short, the upper long; it has no horny points. The two outer toes, without tubercles, have each only one tuft of long bristles.

" With this described comb-like instrument on the inner toe only of each hind foot, the little animals were observed to be continually dressing their soft light brown fur; and the facility with which they managed to reach every part of each lateral half with the toe of the foot on that side, as well as the rapidity of the motion, were very remarkable.

" When walking, the whole length of the hinder foot, from toe to heel, was placed upon the ground; of the anterior extremity the toes only rested on the ground.

" When deprived of the skin, the head appears large compared to the bulk of the body; it is wide and flattened in form: the *meatus auditorius externus* is elongated, forming a tube 2-10ths of an inch in length on the inferior surface, and lined with a dense black pigment. No cheek pouches exist. The teeth are of singular character, the molars of the upper and under jaws being decidedly different. Incisors $\frac{2}{2}$, canine $\frac{0}{0}$, molars $\frac{3-3}{3-3}$. The incisors of the upper jaw are stout, square and truncated; the molars are oblong, flat and plain on the inside, with one indentation on the outerside. The incisors of the lower jaw are slender and pointed; the molars somewhat diamond or lozenge-shaped, with one indentation between each of the four angles. This character more particularly applies to the two anterior molar teeth of each jaw, the last molar tooth, both above and below, being more elongated. From the superior incisors to the molars, the roof of the mouth presented four prominent tubercles anterior to the usual rough expanse of the palate. The *pharynx* and *œsophagus* were narrow. The lungs were made up of one large and two small lobes on each side; the heart presented nothing remarkable. The liver paler than natural, soft, and granulated in appearance, was composed of two small and one large lobe on the right side, and two equal-sized lobes on the left: the gall-bladder large and spherical. The spleen measured 1 inch and 7-10ths in length, and 6-10ths in width. The stomach, a single cavity, without any apparent division, measured 1 inch and 2-10ths in depth, in the direction of the entrance of the *œsophagus,* and 2 inches in breadth: the pyloric orifice contracted, the *duodenum* dilated to 1 inch and 2-10ths in circumference: length of the small intestines 2 feet and 9 inches. The *cæcum* 3 inches in length, curved upon itself, 2 inches and 4-10ths in circumference, and divided by numerous *septa.* The *colon* equally large at the commencement, but gradually diminishing: at the distance of 7 inches from the insertion of the *ileum* it was of small calibre, occasionally dilated, forming *sacculi,* in which the fæcal matter was collected and detained. The *rectum* narrow and uniform in size; the whole length of *colon* and *rectum* 3 feet 8 inches. The kidney of the right side was two-thirds of its length in advance of that on the left: each measured 7-10ths of an inch in its longest diameter, and 4-10ths in width.

"Some peculiarities observed in these little animals are worthy of notice. The molar teeth, as before stated, presented the singular anomaly of those of the upper jaw being different in their structure and surfaces from those of the lower jaw. The former, in their crowns, are very similar to those figured by M. F. Cuvier, as peculiar to his genus *Helamys* (*Pedetes,* Illig.); while those of the lower jaw somewhat resemble the teeth of the various species of *Arvicola.* The stomach, in form and pyloric contraction, is like the same organ in the *Lemmings* (*Lemmus*), *Jerboas* (*Dipus*), and *Gerbilles* (*Gerbillus*). The *cæcum* resembles that of the *Guinea-Pig* (*Cobaya*), *Agouti* (*Dasyprocta*), and *Marmot* (*Arctomys*); while the sacculated form of the *colon* is found in the common *House-Rat* (*Mus decumanus,* L.)

"Both the specimens possessed by the Society proved to be females. The skin of one has been preserved for the Museum: the bones of the other are in preparation for a skeleton, and when mounted may probably be the subject of further notice."

Mr. Yarrell having concluded the reading of his notes, it was stated by Mr. Ogilby, that since the time when he had originally mentioned his belief of the identity of the *Ctenodactylus Massonii* with the *Gundi Marmot,* that opinion had been confirmed by a passage in Captain Lyon's Travels in Northern Africa, in which the *Gundi* is so well described, as to leave no doubt on his mind of its being the same animal as those presented to the Society by Mr. Warrington.

Mr. Gray remarked, that the individuals of the *Ctenodactylus Massonii* which he had described, having been sent from the Cape of Good Hope, he did not suspect their specific identity with an animal from Barbary, known to science by short and imperfect notes alone, and of which no specimen was recorded as existing in any collection. He added, that the size mentioned by Rohtman, that of a small rabbit, appeared to him to be greater than should be attributed to the animal in question; which, moreover, he could not regard as being of a testaceous red colour. In the other particulars mentioned in Rothman's brief description, his *Mus Gundi* agreed well with the *Ctenodactylus Massonii.*

A specimen was exhibited of the *Otis Kori,* Burch., which forms part of the collection of Mr. Gould. This gigantic species of *Bustard*, the largest yet known of its genus, measures upwards of five feet in height. No figure of it has yet appeared, nor is it described in any of the general works on ornithology; but its characters will be found, together with some other particulars respecting it, in Mr. Burchell's Travels in Southern Africa, vol. i. p. 393.

The following notes on the anatomy of a male *Suricate* were read by Mr. Owen :—

"Since I had the honour to lay before the Committee an account of the anatomy of the female *Suricate*, her male companion, the only surviving specimen which the Society possessed of this interesting species, has also died. This circumstance, otherwise to be regretted, has enabled me to add the following particulars to that account.

"The *rugæ* of the *œsophagus* are longitudinal throughout the whole length of the tube;—in the *Lion*, and some others of the feline genus, the *rugæ* are transverse at the lower or terminal half of the *œsophagus*;—the cuticular lining is continued about two lines into the cavity of the stomach, where it terminates by a well-defined edge. This *viscus*, which was found moderately distended, presented no *rugæ* on the inner aspect, but was lined by a simply villous membrane, to which layers of coagulated *mucus* adhered very firmly. The muscular coat was thicker, as is usual, at the *pylorus*: this aperture was very small, not more than a line in diameter. An inch beyond this part the biliary and hepatic ducts entered by a common orifice. The interior of the small intestines presented a finely villous surface; and in the *ileum* were five patches of *glandulæ aggregatæ*, about half an inch in diameter, with intervals of four or five inches: the largest of these patches was situated at the termination of the *ileum*. The *apex* of the *cæcum* was occupied by a similar glandular structure. The terminal orifice of the *ileum* was of a circular form, about two lines in diameter, with a tumid margin, but unprovided with a valvular structure. In the lining membrane of the short tract of large intestines, *villi* were not perceptible to the naked eye. The verge of the *anus* was covered by the apertures of numerous follicular glands.

"The disposition and admeasurements of the alimentary canal corresponded with those of the female previously given. The spleen was one-third smaller; the *pancreas* had the same peculiar form, resembling the neutral symbol of the entomologist ♀. The liver had the same minutely mottled aspect which was observed in the female; but on employing the test of injection, the vascularity of the small bodies, which might have been mistaken for tubercles, became immediately evident, proving them to be the *acini* of the liver, remarkably distinct in this animal. The inner surface of the gall-bladder and its duct was villous, but without *rugæ* or valvular structure. The tubular structure of the kidneys terminates in a single pointed *papilla*: the ureters communicate, and end by a common orifice at the middle of the posterior surface of the bladder.

"The *testes* were about the size of horse-beans, and lay upon the *pubes*; the integument covering them had not any distinct appearance of *scrotum*. The extremities of the *epididymis* or *globi* were proportionately large. The *vas deferens* had a blind process on each side. The urinary bladder was contracted, and its coats consequently were thick: the membranous portion of the *urethra* was one inch and a half long, and its canal wide. The prostatic glands, analogous in their situation to Cowper's, were two in number, and as large as the *testes*; each terminated by a single wide duct, a few lines from the extremity of the *glans*. An interesting provision exists to prevent the secretions of these glands being driven into the large extent of *urethra*, which lies between them and the bladder: the inner membrane of the canal is raised in a semilunar fold behind the entrance of the ducts, which must act as a very complete valve during the turgescent state of the *parietes* of the canal. The *penis* is about eight lines in length; the *glans* of a pointed form, unarmed, the external orifice a longitudinal groove directed backwards.

"Both animals died with the pupil expanded, and of a circular form."

A description of the *Chiru Antelope*, by B. H. Hodgson, Esq., dated Valley of Nepal, Oct. 18, 1830, was read.—This animal, the supposed Unicorn of the Bhotians, was first described imperfectly by Dr. Abel, from an injured skin, and the notes of Mr. Hodgson. Dr. Abel gave to it the name of *Antilope Hodgsonii*; and it has subsequently been mentioned by M. Lesson as the *Ant. Chiru*, and by Major Hamilton Smith as the *Ant. Kemas?* Opportunities which have occurred since his original notes were prepared have enabled Mr. Hodgson to make some additional observations on other individuals, the results of which are given in the present paper. The species may be characterized as follows:—

Ant. Hodgsonii, Abel. *Ant. cornubus longissimis, compressis, gradatim attenuatis, suberectis, lyratis, annulis 15–20 anticè prominentibus, apicibus tantùm lævibus: vellere duplici; interno lanato cinerascenti-cœruleo; externo piloso supernè cervino, infernè albo: tumore molli utrinque supra nares.*

Fœm. *simillima?*

Longitudo circà 5 ped.; alt. ad humeros 2½—3 ped.

In form the *Chiru Antelope* approaches the *Deer*. Its limbs are long and slender, but not weak: its neck is also rather elongated and slender: its head tapers forwards, but is somewhat deficient in elegance on account of the nasal tufts, and of a rather unusual quantity of hair and bristles about the mouth and nose. In its ordinary attitude the line of the back is nearly horizontal; the neck is bowed outwards and downwards, so that the head is carried not much above the level of the back; and there is a stoop in the hind legs on account of which, though they are rather longer than the fore legs, the hind quarters are not perceptibly raised.

The ears and tail are moderate, and devoid of any peculiarity; so likewise are the suborbital sinuses. The horns are exceedingly long, measuring in some individuals nearly two feet and a half. They are placed very forward on the head, and may be popularly said to be erect and straight, although properly speaking they bend forwards and outwards, and become suddenly incurved towards their tips. These latter are rather acute, and the horns near them become round; below they are laterally compressed, and are marked by a series of from fifteen to twenty rings, extending from the base to within six inches of the tip. On the lateral and dorsal surfaces of the horn these rings are little elevated, and present a wavy rather than a ridged appearance; but on the frontal surface they exhibit a succession of heavy, large ridges, with furrows between.

Close to the outer margin of either nostril is a soft, fleshy, or rather skinny, tumour or tuft, about the size and shape of the half of a domestic fowl's egg. These tufts, the purpose of which Mr. Hodgson has been unable to discover, appear to be peculiar to the *Chiru.*

In its double covering the *Chiru* agrees with all the hairy animals of Tibet; where not merely the goats and sheep, but the dogs, horses, and kine, possess an under fleece of soft and fine wool. The hair forming the external coat is about two inches long, and so closely set as to present to the touch an impression of solidity; it is straight, nearly erect, rather harsh, and feeble, being for the most part hollow like a quill. Grey blue is the general colour of the hair throughout nine-tenths of its extent from root to tip, as well as exclusively so of the wool beneath the hair. This radical and prevalent colour is, however, but dimly seen through the external or superficial hues with which it is overlaid; hues which on the upper parts of the animal are fawn-red, and on its under surface and the inside of its limbs are white. The shoulders are faintly marked by a tracing of colour lighter than that of the surrounding parts. Down the front of all the legs runs a black line reaching to the hoofs on the fore legs, but to the knees only on the hind legs. The forehead is perfectly black, and a fringe of the same hue proceeding from the bottom of the frontal skin passes round the outsides of the nasal tufts. These tufts, as well as the rim surrounding them, are black; as are also the bristles of the mouth and lips; the few hairs, however, which depend from the lower lip are white.

Some of the dimensions of the fully grown young male from which the preceding description was taken are as follow: Entire length, 4 feet 11 inches; length, minus tail, 4 feet 2½ inches; length, minus head and tail, 3 feet 6½ inches; height at the shoulder, 2 feet 8 inches; height of the fore-leg, 1 foot 8 inches; of the hinder leg, 1 foot 9 inches; length of the horns, 2 feet ½ inch; basal depth of the horns, fore and aft, 2⅛ inches, from side to side, 1¼ inch.

The *Chiru Antelope* is highly gregarious, being usually found in herds of several scores and even hundreds. It is extremely wild and unapproachable by man, to avoid whom it relies chiefly on its wariness and speed; but though shy it is not timid, for if overtaken it meets danger with a gallant bearing. The individual which was kept alive at the Residency, though captured very young, was perfectly fearless, and could only be approached with caution. It is said by some to inhabit the plains of Tibet generally; while, according to others, it is confined to those plains which are within sight of mountains, especially of the Hemâchal mountains. It cannot bear even the moderate heats of the valley of Nêpâl; an individual belonging to the Lama of Digurchee, having died at the commencement of the hot season, when the maximum of temperature was only 80°, a temperature seldom reached for two hours a day or for two days of that month, March.

The *Chiru* is extremely addicted to the use of salt in the summer months, when vast herds are often seen at some of the rock-salt-beds which so much abound in Tibet. They are said to advance under the conduct of a leader, and to post sentinels around the beds before they attempt to feed.

To complete this abstract of Mr. Hodgson's account of the *Chiru*, it may be added, that at the following meeting of the Committee there was exhibited a drawing of its head and horns, which had been subsequently transmitted by that gentleman; together with a duplicate of his paper, to which he had added that he had recently seen a very old male, in which the dark parts had become grizzled and almost white.

Mr. Vigors recalled the attention of the Committee to the subject of the Himalayan Birds; confining his observations this evening to some species of the family of *Merulidæ* or *Thrushes*. Among these was a new species closely allied to the common European *Blackbird*, exhibiting the yellow bill and general black plumage of that bird, but differing from it in the varied markings of the wing. It was characterized as follows.

TURDUS PŒCILOPTERUS. Mas. *Turd. corpore nigro, abdomine imo subcinerascenti-fusco; remigum mediarum pogoniis externis pteromatibusque cineraceo-griseis, his apice albis; rostro pedibusque flavis.*

Fœm.? *Corpore suprà brunnescenti-griseo, subtùs pallidiori; pteromatibus remigumque mediarum pogoniis externis ut in mari notatis, sed colore subrufescenti tinctis.*

Statura ferè *Turdi Merulæ*, Linn.

A species of *Cinclus* was exhibited, differing from the European in the uniform colouring of the plumage. Mr. Vigors expressed his opinion that it was the same species as that discovered in the Crimea by Pallas, and described by M. Temminck in his 'Manuel' as having "tout le plumage, sans exception, d'une seule nuance brune, couleur de chocolat."

The following may be given as its specific character.

CINCLUS PALLASII, Temm. *Cincl. unicolor, intensè brunneus; rostro pedibusque fuscis.*

Statura *Cincli aquatici*, Bechst.

Mr. Vigors referring to the bird which had been described by the Prince of Musignano among the species from the Rocky Mountains, added to his Synopsis of North American Birds in the 'Annals of the Lyceum of New York,' [p. 439, sp. 94 bis], and which was conjectured by that distinguished naturalist to be the same as the *Cinclus Pallasii,* stated that upon comparing the original specimen, so described by the Prince, with the present bird, he found them perfectly distinct. The American bird is of a deep ashen grey colour, the Himalayan of a chocolate brown;—the bill of the former is yellow with a dark *apex*, and the legs are yellow, the same members in the latter being fuscous. There are thus three species well known of this genus; the *Cincl. aquaticus, Pallasii,* and *unicolor,* which latter name had been originally given by the Prince of Musignano to the American bird, on the supposition of its being distinct. The *Cincl. Mexicanus,* Swains., [Phil. Mag. July 1827], if not the same as the Rocky Mountain bird, as stated in the 'Annals of the Lyceum,' will form a fourth species.

A series of Birds belonging to this family were then exhibited, which Mr. Vigors referred to a group characterized by Dr. Horsfield and himself in the 15th volume of the 'Linnean Transactions,' under the name of *Cinclosoma,* the type of which was an Australian species, the *Turdus punctatus* of Dr. Latham. Mr. Vigors pointed out the characters that seemed to distinguish the *true Thrush,* or the type of the restricted genus *Turdus,* Auct.; which consist in a subacuminated wing, in which the first quill feather is extremely short, almost spurious, the second somewhat shorter than the third, and the third, fourth and fifth almost equal, and the longest; in the tail being even, and of moderate length; and in the *acrotarsia* or front covering of the *tarsi* being generally entire, or undivided by any perceptible scales. To this typical division of the family belong the *Throstle, Blackbird, Ring-Ouzel, Red-Wing, Fieldfare,* and *Missel Thrush* of Europe, the *migratory Thrush* of North America, the *Himalayan Blackbird* just described of India, the *varied Thrush* of New Holland, &c. &c. On the contrary, the group of *Cinclosoma,* while it exhibits the general characters of the bill of the *true Thrushes,* although partially modified in some of the species, displays an entirely different conformation of the wing and tail; the former of these members is comparatively short, and rounded, the first quill feather being of moderate length, the second, third, fourth, and fifth, gradually increasing in length; the fifth, sixth, seventh and eighth, nearly equal; and the rest gradually decreasing; the tail at the same time being lengthened and graduated, as is usually the case in birds where the wings are short and rounded. The scales also of the *acrotarsia* in *Cinclosoma* are conspicuously distinct. In this group the feathers are generally decomposed, as has been observed to be the case in the genus *Timalia,* Horsf., to which it bears a close affinity, and from which perhaps it can only be separated by the more short and arched beak of the latter group. Mr. Vigors observed that there were several Indian species which might be referred to this group. The four following, which were apparently hitherto undescribed, were then characterized as belonging to it.

CINCLOSOMA OCELLATUM. *Cinclos. capitis fronte et lateribus, corporeque suprà rufo-brunneis; vertice, colloque in fronte nigro-*

brunneis; pectore albescenti-rufo nigro fasciato; abdomine pallidè rufo, nuchâ, dorso, alis, caudæque tectricibus ocellis anticè atris posticè albis, notatis; remigibus et rectricibus lateralibus griseo-fuscis, apicibus albis.

*Rostrum pedes*que flavescentes, illius culmine fusco. *Remigum* mediarum pogonia externa grisea, strigam griseam alarem exhibentes. *Tectrices* alarum inferiores rufo nigro albescentique variegatæ. Longitudo *corporis*, 14; *alæ* a carpo ad remigis 6tæ apicem, 5; *rostri*, $1\frac{3}{10}$; *tarsi*, $1\frac{7}{10}$; *caudæ*, 7.

CINCLOSOMA CAPISTRATUM. *Cinclos. capite supra, genis, pteromatum maculâ, rectricibusque ad basin intensè atris; remigum pogoniis externis, rectricum apicibus, tectricibusque alarum fusco-griseis, his fasciâ albâ notatis; dorso medio pallidè brunnescenti-griseo; collo in fronte, nuchâ, pectore, abdomineque summo pallidè, dorso abdomineque imis saturatiùs, rufis.*

Rostrum nigrum, *pedes* flavescentes. *Remiges* interiores, *rectricum*que mediarum bases rufi. Longitudo *corporis*, 10; *alæ* a carpo ad apicem remigis 6tæ, 4; *rostri*, $\frac{9}{10}$; *tarsi*, $1\frac{3}{20}$; *caudæ*, $4\frac{1}{2}$.

CINCLOSOMA VARIEGATUM. *Cinclos. strigâ a rictu per oculos extendente, mento colloque in fronte, maculâ pteromatum et mediâ alarum, rectricumque mediarum basibus atris; fronte, strigâ genarum infrà, pectoreque pallidè albescenti-rufis; notâ pteromatum, abdomine crissoque rufis; capite suprà, nuchâ, dorsoque brunnescenti-griseis; alarum pogoniis externis, rectricumque mediarum quatuor apicibus cineraceo-griseis; rectricibus quatuor utrinque lateralibus externè flavo-olivaceis, apicibus albis.*

Rostrum nigrum, *pedes* rubri. Longitudo *corporis*, 11; *alæ* a carpo ad apicem remigis 6tæ, 4; *rostri*, $\frac{9}{10}$; *tarsi*, $1\frac{3}{10}$; *caudæ*, $4\frac{1}{2}$.

CINCLOSOMA LINEATUM. *Cinclos. capite suprà, nuchâ, dorso imo, rectricibusque duabus mediis brunnescenti-griseis; regione postoculari, dorso summo, corpore infrà, rectricibusque lateralibus pallescenti-rufis; his fasciâ nigrâ pone apicem album notatis; capitis nuchæque plumis in medio lineis fuscis, pectoris dorsique summi lineis pallidis, per totam rhachium longitudinem graciliter strigatis.*

*Rostrum pedes*que flavescentes. Longitudo *corporis*, $9\frac{1}{2}$; *alæ* a carpo ad apicem remigis 6tæ, $3\frac{1}{2}$; *rostri*, $\frac{7}{10}$; *tarsi*, 1; *caudæ*, $3\frac{3}{4}$.

April 12, 1831.

N. A. Vigors, Esq., in the Chair.

Mr. Coleman, adverting to the statement made at the last meeting of the Committee that the female *Armadillo* had destroyed her young, remarked that the cause of this apparent aberration of instinct in a mother was generally to be found in the deficiency of her supply of milk. In the many cases which had fallen under his notice, in which female pigs, rabbits, and other domesticated animals had destroyed their progeny, he had always observed that the secretion of milk in the mammary glands of the dam was greatly, if not entirely, deficient.

A letter was read from M. F. Cuvier, acknowledging the receipt of the Society's circular, and embracing the offer contained in it of establishing a scientific correspondence. M. F. Cuvier states that the zoological subjects which possess at the present moment the greatest interest in Paris are those which have been transmitted from Chili, by M. D'Orbigny, who is now engaged in travelling on account of the Jardin des Plantes. M. F. Cuvier has not yet examined them with care; but he has observed among them a large *Rodent* animal, which is probably the *Patagonian Cavy* of Pennant, a species unknown to later zoologists: it forms the type of a new genus allied to *Anœma* and *Kerodon*, its teeth having nearly the form of those of the last-mentioned group, and being without distinct roots. He has also remarked a very small species of *Ratel*, distinguished from the type of the genus, as it exists in the old continent, by having two false molar teeth less in each jaw: it is also much smaller, its size not exceeding that of the *Pole-cat*, (*Mustela putorius*, L.) It is remarkable, he adds, that in Chili, the southern extremity of America, a second species should at length be found of a genus hitherto met with only in Africa and in India. "If Buffon had been acquainted with this fact, he would have had a fine example to adduce in favour of his hypothesis of the diminutive size of the animals of the New World, as compared with those of the Old." The Jardin des Plantes has recently obtained living individuals of the small *Deer* of America, named by M. F. Cuvier *Cervus campestris*; this will shortly be figured in his 'Histoire Naturelle des Mammifères.' Two other *Deer* have been presented to the collection by M. Dussumier, by whom they were brought from Timor: these appear to belong to two new species. From Madagascar, M. Goudot has brought a small carnivorous animal, which he states to be the true *Vansire*. The *cranium* of a very young specimen agrees closely with that of a very young individual of the *Gulo orientalis*, Horsf.; and as these *crania* in their general structure and their system of dentition differ from those of the genus

Gulo, and approach the *crania* of the *Viverridæ*, it is probable, M. F. Cuvier remarks, that the *Gulo orientalis*, and M. Goudot's animal, should both be referred to the family of *Civets*.

At the request of the Chairman, the following Notes of the dissection of the *Ruffed Lemur* (*Lemur Macaco*, L.,) were read by Mr. Martin.

"The *Ruffed Lemur* which died lately in the Museum was a male, and one of a fine pair recently brought to this country. It exhibited marked symptoms of illness a few days only before its death, but had probably been long diseased.

"On the *abdomen* being opened, the *viscera* presented themselves as follows. In the epigastric and hypochondriac regions, stretching from side to side, appeared the liver, and below this the stomach, and the *omentum* loaded with fat, extending to the *pubes*, and covering the whole of the intestines. On turning aside the *omentum* and intestines the spleen was observed; it was large, dark coloured, bound by adhesions to the surface of the kidneys, and studded with numerous small *vomicæ*, from which, on cutting, a thick *pus* oozed out abundantly.

"The liver was trilobed, deeply divided, of a pale colour, singularly mottled with red, and indurated: on cutting into it, the same paleness was found to obtain, joined to a sort of granulated appearance and fracture. The gall-bladder was small, and contained no bile, to the secretion of which the liver was probably of late inadequate. The *ductus choledochus communis* entered four inches from the *pylorus*.

"The intestines were pale and flaccid with extensive adhesions both of these and the mesentery, affording proofs of inflammatory action. The length of the *colon* and *rectum* was two feet; that of the *cæcum* thirteen inches; the shape of the latter was not unlike that of a horn, its base being broad, from whence it gradually tapered to a point, with spiral gyrations on the mesentery. The small intestines measured 5 feet 4½ inches.

"The cavity of the chest was relatively small, that of the *abdomen* advancing high. The lungs were divided into three lobes on the left, and three large and one small lobe on the right side. Their surface afforded strong indications of inflammation, and their substance when squeezed between the fingers communicated a very distinct *crepitus*. The heart was large, and tolerably firm; on the surface of the right ventricle there were two hydatids in a line one above the other.

"The kidneys were rather large, and their structure soft and pulpy. The *testes* were small, elongated, lying in front of the *pubes* and distant from the abdominal ring about one inch. The bladder was small and long; and the ureters entered about a line from the neck. The *vesiculæ seminales* were small and handle-shaped, with a single turn.

"The tongue was long, thin, rounded at the tip, of a black colour except at the root, soft in texture, and covered with downy *papillæ*, which increased in size and length, but diminished in number, towards the root. The *epiglottis* was large and broad; the *rima glottidis* long; and from the arytenoid cartilages two processes extended backwards, having a triangular flattened surface ending in a point."

The body of one of the Society's specimens of the *Razor-billed Curassow*, (*Ourax Mitu*, Cuv.,) was laid on the table, and Mr. Yarrell pointed out the peculiarities of its very elongated *trachea*, which is produced between the skin and the muscles beyond the *sternum*, and reaches almost to the vent. It has been figured by Dr. Latham, M. Temminck, and others. Mr. Yarrell displayed the sterno-tracheal muscles extending along the whole of the tube, and remarked that this disposition prevails, with one or two exceptions, in all birds in which the fold of the *trachea* is not included in bone. In those birds, on the contrary, in which the prolongation of the *trachea* enters a cavity in the *sternum*, (as for instance in the *Hoopers Cygnus ferus* and *Cygn. Bewickii*,) the sterno-tracheal muscles pass from the entering portion of the tube to that which has just left the bone, and are not continued along the fold of *trachea* included within the bone.

A portion of a large collection of Fishes from the Mauritius, presented to the Society by Mr. Telfair, was exhibited; and Mr. Bennett called the attention of the Committee to the species of *Mullet* contained in it. These were eight in number, and belonged to the extra-European form to which the name of *Upeneus* has been given by M. Cuvier, and which is distinguished from the European *Mullets* by the presence of teeth in the upper jaw. Four of these fishes appear to have been previously undescribed, and may be thus characterized:

UPENEUS BITÆNIATUS. *Up. dentibus velutinis apud maxillas, vomerem, et ossa palatina: capite pone oculos subdepresso: pinnis dorsalibus caudalique nigro obliquè fasciatis; corpore toto rubicundo, dorso argenteo-vittato, vittis duabus aureis infrà lineam lateralem.*

D. 7, $\frac{1}{8}$. A. $\frac{1}{6}$. C. 15. P. 16. V. $\frac{1}{5}$.

Affinis *Up. vittato*, Cuv. & Val: sed differt vittis duabus aureis; differt etiam vertice depresso rostroque subtumido, capite haud æqualiter rotundato.

UPENEUS MAURITIANUS. *Up. dentibus velutinis maxillaribus: rostro brevi, orbitæ subæquali: pinnis dorsali secundâ analique declivibus.*

D. 7, $\frac{1}{8}$. A. $\frac{1}{6}$. C. 15. P. 16. V. $\frac{1}{5}$.

Affinis *Up. flavo-lineato*, Cuv. & Val.: brevior est, rostrumque multo brevius, in illo nempe orbitæ sesquidiametrum æquat.

UPENEUS PLEUROSTIGMA. *Up. dentibus conicis maxillaribus: corpore pinnisque (præter dorsali 2dâ analique) cinnabarinis; maculâ magnâ rotundatâ laterali mediâ nigrâ; punctis plurimis infra et post oculos aureis.*

D. 8, $\frac{1}{8}$. A. $\frac{1}{7}$. C. 15. P. 16. V. $\frac{1}{5}$.

Affinis *Up. lateristrigæ*, Cuv. & Val. Caput rotundatum sicut in *Mulo Surmuleto*, L.

Upeneus immaculatus. *Up. dentibus conicis maxillaribus distantibus : corpore, basi anteriore pinnæ dorsalis prioris, apiceque lobi inferioris caudalis, cinnabarinis : cirris albis, ultra operculum productis.*

D. 8, $\frac{1}{8}$. A. $\frac{1}{6}$. C. 15. P. 16. V. $\frac{1}{5}$.

Affinis *Up. chryserydro*, Cuv. & Val.: sed corpus duplò latius, rostrumque magis declive.

The species characterized embrace instances of three of the distinct types of dentition indicated in this genus by MM. Cuvier and Valenciennes.

The original drawings by Mr. Abbott of the Lepidopterous Insects of Georgia, (engravings from which were published by the late Sir J. E. Smith,) were exhibited. The Committee was indebted to Mr. Henry Brogden, F.L.S. for this exhibition.

Mr. Vigors referred to a pair of *Owls* which had been lately added to the Society's collection. These were closely allied to the European *Strix flammea*, a species which is found with some slight modifications of character all over the globe ; but from which the present species differs essentially, exclusively of other characters, by the markings of the disk of the face. They were from Australia ; and not having appeared to have been noticed by any ornithological writer were characterized as follows.

Strix personata. *Strix pallidè badia ; capite suprà, dorso, alisque fusco brunneo variegatis, albisque guttulis parcè sparsis ; corpore infrà pallidiori, brunneo parcè maculato ; caudâ badio brunneoque undulatim fasciatâ ; disco purpurascenti-badio, circulo marginali intensè brunneo notato ; digitis unguibusque fortissimis.*

Longitudo *corporis*, 13$\frac{1}{2}$; *alæ* a carpo ad apicem remigis 2dæ, 9 ; *tarsi*, 2 ; *caudæ*, 7$\frac{1}{2}$.

A series of birds, belonging to several Families, which were apparently undescribed species, was exhibited by Mr. Leadbeater who mentioned his intention of continuing a similar exhibition during some future meetings of the Committee, and then giving a general description of the whole.

April 26, 1831.

Joshua Brookes, Esq. in the Chair.

Mr. Vigors exhibited, from the collection of Mr. Leadbeater, an undescribed species of *Cockatoo* from New Holland, and pointed out its distinctive characters, which may be expressed as follows:

PLYCTOLOPHUS LEADBEATERI. *Plyct. albus; genis, collo in fronte, pectore, tectricibus alarum inferioribus, abdomineque medio roseo-tinctis; cristæ elongatæ occipitalis plumis basi roseis, apice albis, maculâ flavâ in medio notatis; pogoniis remigum rectricumque internis roseis, illorum saturatioribus.*

Statura *Plyct. sulphurei*, Vieill.

Eleven species of *Chætodons*, forming part of the collection of *Fishes* from the Mauritius presented by Mr. Telfair, were laid on the table. Seven of these were referable to the genus *Chætodon* as restricted by M. Cuvier; and among them Mr. Bennett pointed out more particularly the *Chæt. strigangulus*, Sol.; the *Chæt. vittatus*, Schn.; the *Chæt. Lunula*, Cuv. & Val.; and two species which he believed to be new to science, and which may be thus characterized:

CHÆT. FLAVESCENS. *Chæt. flavus; ore, fasciâ oculari, lineâ pinnas dorsalem analemque posticè ambiente, apiceque pinnarum ventralium nigris; lateribus argenteo vittatim guttulatis; pinnâ caudali rectâ, apice latè hyalino.*

D. $\frac{13}{22}$. A. $\frac{3}{18}$, &c.

Affinis, ut videtur, *Chæt. virescenti*, Cuv. & Val. Differt colore flavo; pinnis verticalibus posticè nigro tenuiter cinctis; lateribus obscurè argenteo-guttulatis.

CHÆT. ZOSTER. *Chæt. brunneo-niger; zonâ latâ mediâ ventreque argenteis; pinnâ caudali rectâ albâ: fasciâ oculari nullâ.*

D. $\frac{12}{25}$. A. $\frac{3}{21}$. P. 17. C. 15. V. $\frac{1}{5}$.

The remaining species exhibited types of the genera *Heniochus*, Cuv.; *Zanclus*, Cuv. & Val.; *Holacanthus*, Lacép.; and *Platax*, Cuv.: the *Heniochus* being the species recently described by MM. Cuvier and Valenciennes as the *Hen. monoceros.* In this individual the spine in front of each orbit is strong, almost equalling the single spine which projects from the middle of the slope of the head; and the whole contour of the anterior part of the fish approaches very nearly to that of *Taurichthys*, Cuv. & Val.

Mr. Gray exhibited several living specimens of the *Rana Rubeta*, L., the *Natter-jack* of Pennant, a reptile intermediate in form and habits among the British *Amphibia* between the *Toad* and the *Frog*. He stated that this animal, the indigenous existence of which has frequently been doubted, is found abundantly on Blackheath, and on other commons in the neighbourhood of London.

Mr. Gray also exhibited several specimens of the genus *Rhynchæa*, Cuv., and pointed out from among them two distinct species, which may be thus characterized:

RHYNCHÆA CAPENSIS, Sav. *Rhynch. remigibus angustis, fasciis latis flavis sex notatis, infrà griseis, nigro-vermiculatis, flavoque fasciatis; secundariarum maculâ pogonii externi, fasciâque pogonii interni, flavis.*

Long. corporis $9\frac{3}{4}$ unc.: tarsi, $21\frac{1}{2}$ lin.: digiti unguisque medii, $20\frac{1}{2}$ lin.

RHYNCHÆA PICTA. *Rhynch. remigibus sublatis, externis flavo latè 7-fasciatis, infrà griseo nigroque vermiculatis, interno obsoletè flavo-fasciato: secundariarum apicibus, maculâ ultimâ fasciæformi pogonii externi, fasciâque pogonii interni, albis.*

Long. corporis $10\frac{1}{2}$ unc.: tarsi, $19\frac{1}{2}$ lin.: digiti medii, 19 lin.

The wing-coverts of both species are spotted with yellow in the young state; and in the adult state are metallic olive with black bands.

Mr. Gray added that the three figures of birds of this genus which were published by Buffon, and which had of late years been regarded by M. Temminck and by M. Cuvier as representing various states of but one species, were none of them sufficiently correct in the details to enable him to refer either of the present species to the representations given in the 'Planches Enluminées;' but that the figure of the *Rhynchæa Capensis* given by Savigny in the 'Oiseaux d'Egypte' [tab. 14. fig. 2.], furnished a faithful representation of the first species exhibited by him. He had not, however, obtained this bird from the Cape of Good Hope, his specimens being from India and China. The second species, *Rhynchæa picta*, he had received from Africa as well as from India and China.

Mr. Vigors called the attention of the Committee to the *Frigate-bird* (*Tachypetes Aquilus*, Vieill.), and dwelt upon those peculiarities of its organization which point out its station in the series of natural affinities that connect the orders of birds. Although it possesses the webbed feet which constitute the technical character of the Natatorial Order, the weakness of its legs and their complete covering of feathers preclude it from employing these members in the same manner as the typical groups of the Swimming Birds; while on the other hand its great powers of wing and tail adapt it for powerful and long-continued flight, and evidently connect it with the Raptorial Order, which it also resembles in its manner of taking its food. It is in fact rather an inhabitant of the air than of the water; and it has been believed that it derives support during its unlimited flights not merely from the strength and expansion of its wings and the singular mechanism of its tail, but also from the buoyant nature of the inflated sac beneath its throat. A proof of the correctness of the opinion that this pouch is really an air-sac, and that it is filled with air, which passing through the bones becomes rarified and capable of imparting a high degree of buoyancy, has recently been obtained from the anatomical notes made by Mr. Collie, late Surgeon of H.M.S. Blossom, who accompanied Captain Beechey in his voyage to Behring's Straits; notes which will shortly be published in illustration of the natural history of that expedition. "The pouch beneath the throat of this bird," says Mr. Collie, "is of a yellowish red colour, and when distended, the feathers on its upper and posterior surface are separated to some distance from each other, and exhibit very distinctly the quincuncial order in which they are implanted. On first looking at this pouch, I was a little surprised at finding that it did not communicate with the mouth or *fauces* in any way that I could perceive. I succeeded in inflating it only by long and forcibly blowing into the *trachea*. I desired the man who had the skinning of the specimens brought on board to inflate the pouch before commencing the skinning, and to let me know when he had advanced to the shoulders. He however dislocated the shoulder-joint first, when the distended pouch immediately collapsed. The *trachea* had been tied. As soon as I was informed of this, I had little doubt that the pouch had been inflated from the lungs; and on observing two wide openings, one anterior to the humeral articulating face of the *scapula*, the other the usual opening of the joint, I hesitated not to infer that it was through the first of these the air had passed in, and that the dislocating of the joint, by which its capsular ligament was torn, had allowed the air to escape at the opening which corresponds to that on the head of the *humerus*, and which immediately leads, as well as the other just mentioned, into the centre of the *scapula*. I now opened the *trachea* immediately before the *sternum*, and again attempted inflation from that part, but in vain. I tried it also, but with no better success, from the *larynx*. I next examined with the blowpipe near the opening of the *scapula*, in the cellular substance under the skin, and soon detected a small opening that conducted the air to the pouch, which was readily inflated by blowing through the opening, and so long as it was shut the pouch continued distended. That this opening was not artificial,—the effect of the rupture of the fine membrane lining the air-bladder,—was evident from its not opening directly into it, but only after a passage of some length, gradually enlarging. That this was the sole opening into the pouch appears proved from the fact that after detaching the sac from all the parts beneath, *i. e.* from all the parts excepting the skin, it did not permit the gas to escape except by this opening, and that it continued to be capable of inflation from it. I was satisfied in discovering it on one side; and of course inferred that it was similar on the other, the opening of the *scapula* being similar."

At the request of the Chairman, Mr. Martin read the following notes of the dissection of a female *Testudo Græca*, L., which died in the possession of Oct. Morgan, Esq. The animal was of the usual size, its dimensions being as follows: the *carapace* in length 13 inches; the *plastron* 9½ inches in length; and the circumference of the shell, 18 inches.

"The *plastron* being removed, the *viscus* which first attracted notice was the liver, of large dimensions, stretching across from side to side, and quite covering the stomach. Its structure was very firm, and its colour a dull ochre. It consisted of two lobes, both deeply fissured. In the cleft of the right lobe was situated the gall-bladder, of the size of a large nut, and containing green bile. The cystic and hepatic ducts united, and entered the *duodenum* 1½ inch below the *pylorus*.

"On the liver being turned aside, the stomach presented itself; its coats were firm and thick, especially in the pyloric portion, which was produced long and narrow to the extent of 3½ inches; the total length of the stomach was 6½ inches.

"The small intestines, remarkable also for their firmness, measured 2 feet 8 inches in length, and terminated in large intestines very little exceeding them in circumference. In the *Testudo Indica* lately dissected, there was no *cæcum;* but in the present species the *cæcum* existed; its form was globular. On the left side the large intestine assumed a sigmoid flexure with a bold sweeping fold, and then took on a straight and short course to the *cloaca;* the length of the large intestines was 1 foot 8 inches. They contained fæculent matter in small quantity, consisting of fibrous vegetable substance. There were no longitudinal bands.

"The *cloaca*, into which opened the bladder and oviducts, was in length 2 or 3 inches. The bladder in the present instance did not exhibit that immense volume which was so remarkable in the *Test. Indica:* it was of a moderate size; both in this respect and in figure resembling a pear. It was united to the sides of the upper shell by a broad peritoneal ligament, and was connected also to the *pelvis* by several fibrous bands. Its coats were extremely thin and fibrous; and it contained a small quantity of thick fluid.

"The oviducts were before their opening into the *cloaca* united for a considerable distance, and were there thick and firm, becoming gradually thinner as they proceeded upwards, their course being in an indefinite convoluted manner. Throughout the greatest part of their length there ran a number of longitudinal folds, which became fainter, and were at length obliterated as the oviducts proceeded.

"The ovaries contained a multitude of eggs of various sizes, and of a round figure; fifty of them at least were nearly as large as a pigeon's egg: they were not covered with a shell, and were filled with a thick yellow yelk.

"The kidneys laid upon the lungs (which extended over the *carapace*), to which they adhered; their figure was somewhat 3-sided, from a broad flat base, with a rounded *apex:* their length was 2½ inches. Their surface was convoluted in a very singular manner, the folds being divisible, producing an appearance not unlike that of the *cerebellum*, which they also resembled in colour.

"On the *mesocolon* and near the intestine was situated an oval glandular body of a dark colour, and of the size of a sparrow's egg, containing white gritty specks. From this, which I suspected to be the spleen, a large vein proceeded along the mesentery, and uniting with several others, entered the liver; all the veins proceeding from the *viscera* along the mesentery were very large and full of dark blood.

" The tongue was thick and fleshy, about an inch in length and two-thirds in breadth, white in colour, and covered thickly with elongated *papillæ;* the tip was rounded, the base heart-shaped. Between the *glottis* and base of the tongue so slight a distance intervened, that the *larynx* might be said to open directly into the mouth, the *glottis* rising to a point corresponding with and adjusted to the heart-shaped indentation at the base of the tongue. This elevated *apex* is divided downwards and a little way longitudinally by the *rima*. The *larynx* is supported posteriorly by the *os hyoides,* which is broad, flat. and pointed with double barbs, resembling some double-barbed arrow heads: it is however composed of three bones, viz. a body, and two long curved bones united by cartilages to it, the body itself ending in two long cartilaginous processes; where the osseous processes arise there is also on each side a small cartilaginous projection. An inch below the *rima* the *trachea* divides into two branches, or *bronchiæ,* which run down for a little way on each side of the neck, but shortly, in consequence of the bend of the neck, almost at the back of it, and describing in their course a large sigmoid inflexion, they then subdivide and immediately enter the lungs. About half an inch below the great division a strong muscle of two or three lines in breadth passes across, arising from the *vertebræ* of the neck on one side and united to the same on the opposite, thus acting as a *constrictor* on the two tubes, and being doubtless of use in the deglutition of air. The length of the *trachea* and the great branches to the lungs was 7½ inches; the rings were perfect. The subdivisions of the *bronchiæ* before entering the lungs are surrounded closely by numerous yellow glands."

May 10, 1831.

W. Yarrell, Esq. in the Chair.

A letter, addressed by Richard Thursfield, Esq. to Dr. Roots, was read, in illustration of the history of a hybrid between the *Hare* and the *Rabbit*, which was lately living at the Society's Farm. A gentleman who was rearing a pair of tame rabbits, placed with them, when they were about two months old, a young buck hare apparently about the same age, which became in a short time as domesticated as its companions. When the doe rabbit was old enough, she had, by the buck rabbit and the hare, a litter, consisting of three young ones, which resembled in all respects the mother and buck rabbit, and of three mules. Two of these mules shortly died: the third, a female, was reared with rabbits of her own age, and when six months old produced one young one: she was afterwards bred from eight times, by tame rabbits and by a wild one, but no opportunity occurred of placing a buck hare in confinement with her. Her progeny by a white tame rabbit, with which she bred twice, consisted of two young ones, which were perfectly gray, and of two which were spotted: the latter are still alive, and breed regularly, producing from five to eight at a time. The average weight of the progeny of the mule female was about five pounds; one, however, weighed six pounds and a half. She died shortly after coming into the Society's possession.

Mr. Owen, having examined the body of this hybrid animal after its death, reported that its size and colour were those of the *Hare*, but that its hinder legs were shorter than in that species, and agreed rather with those of the *Rabbit*. The length of its small intestines corresponded with that of the hare; its *cæcum* was seven inches shorter; while its large intestines measured one foot more than those of the hare.

Mr. Bennett called the attention of the Committee to the specimen of the *Sociable Vulture* (*Vultur auricularis*, Daud.), which has been an inhabitant of the Society's Gardens for nearly two years. His object in adverting to this bird was to correct an erroneous impression which might be produced on the minds of those who had never seen an individual of the species, by the statement made by M. Ruppel, in a late Monograph of the genus to which it belongs, that considerable doubts as to the existence of such a species might reasonably be entertained. M. Ruppel's doubts appear to have been excited by the fact which he reports, that the stuffed skin in the collection of the Duc de Rivoli at Paris, which has been regarded as that of the *Vult. auricularis*, is evidently factitious; the folds of the skin on the head and neck having been produced in that specimen by artificial means. These doubts must, however, be at once dissipated by the existence of a living specimen brought from the Cape of Good Hope, according in every particular with Le Vaillant's description of the *Oricou*, and having the remarkable folds of skin which pass up the sides of the neck and round the ears developed even to a greater extent than is represented in his figure. A specimen of the *Pondichery Vulture* (*Vultur Ponticerianus*, Daud.), the only other species in which the naked neck has on each side a longitudinal fold of skin, was laid on the table: and it was pointed out that in this bird the fold of skin terminates an inch below the opening of the ear, while in the *Sociable Vulture* it passes upwards and surrounds the upper part of the ear; and that the breast-feathers of the *Pondichery Vulture* are short and rounded, while those of the *Sociable Vulture* are very long and somewhat sabre-shaped.

Mr. Gray stated, that since M. Ruppel's Monograph was written, he had apprised that scientific traveller, in answer to his previous inquiries on the subject, that a specimen of another vulture rejected by him as a doubtful species (the *Vultur Angolensis*, Lath.) exists in the British Museum, to which it was presented on the return of the unfortunate expedition up the river Congo.

Mr. Owen resumed the reading of his Memoir on the Anatomy of the *Orang Utan* (*Simia Satyrus*, L.), portions of which had been communicated by him to the Committee at several of its previous Meetings. On this occasion he limited himself to the myology of the lower extremities.

He commenced by remarking, that no anatomist can contemplate the lower extremity of a Quadrumanous animal, or experience the degree of mobility of which the several parts of it are susceptible in the living or undissected body, without being prepared to find corresponding modifications of the muscular system and consequent deviations from the structure of these parts as they exist in man. It is accordingly in this part of the body that the most remarkable differences in the forms, proportions, and attachments of the muscles are found to obtain between the ape and the human subject; and it will not therefore be matter of surprise to find, that in the *Orang Utan*, whose inferior extremities, from their shortness and flexibility, are so well adapted to the various agile movements of a climber, there exists a high degree of this deviation from the human structure, and an approximation, in some measure symmetrical, to the arrangement of the moving powers in the upper extremity Variations of more or less consequence occur, indeed, so frequently as to render it necessary to consider the whole of the muscles *seriatim;* and each of them was accordingly described separately as regarded its attachments, form, and relative position. These details are necessarily abridged in the present abstract, except as regards the muscles of the hinder hands, which require a developed notice to render their structure intelligible.

The *glutæus magnus* is a thin narrow muscle, inserted lower down the thigh bone, and having a more posterior origin than in man: its extent of action is consequently increased, though its strength is diminished. The *glutæus medius* is also relatively longer than in man, and is four times as thick as the preceding muscle. The *glutæus minor* is narrow, long, and thin. The *pyriformis* is narrower than in man. The tendon of the *obturator internus* passes as usual between the *gemini*, of which the inferior is much the largest. The *obturator externus* is considerably larger than the *internal*. The *quadratus femoris* has very little of the square in its shape, being much longer than it is broad, and becoming narrow and rounded at its insertion.

The *biceps cruris* consists of two portions, each maintaining a distinct course and having a distinct insertion: one of these may be termed *ischio-fibularis*, and is inserted into the head of the *fibula;* the other may be termed *femoro-fibularis;* its insertion is into the outer edge of the *fibula* from the head to the middle of the bone, and into the *fascia* in front of the leg. The *semitendinosus* and *semimembranosus* have the same origins as in the human subject, and the latter muscle a similar insertion; but the *semitendinosus* separates from it at the lower part of the thigh, and continues fleshy for some distance below the knee-joint; after which the tendon expands into a broad strong *aponeurosis*, which is attached along the anterior and inner aspect of the *tibia* to within a short distance of its lower extremity. In its insertion, the *semitendinosus* of the *Chimpanzee* approaches more nearly to the human type, being implanted by a narrower tendon in front of the *tibia* immediately beneath the insertion of the *gracilis;* but both these muscles are inserted lower down than in man.

Mr. Owen remarked, that the names of these last-mentioned muscles by no means agree with the proportion of tendon found in them either in the *Orang* or the *Chimpanzee*, the fleshy portion being in these animals of much greater extent;—a fact which is in accordance with a law that receives many illustrations from the myology of the *Orang Utan*, viz. that the extent of the fleshy part of a muscle is in proportion to the quantity of motion it has to produce: and this is generally indicated by the degree of motion allowed by the structure of the joint which is the centre of the motion in question. Thus in the human subject it is very rare that an individual can, by the contraction of the flexors of the leg, bring the heel in contact with the back of the thigh; but in the *Orang Utan* this action is readily performed, and without the slightest opposition at the knee-joint.

The *tensor vaginæ femoris* exists distinctly in the *Chimpanzee*, but no trace of it was found in the *Orang*. A more powerful *rotator* of the thigh inwards exists in both animals in a peculiar muscle, which may be termed *invertor femoris*. It was first discovered by Dr. Traill in the *Chimpanzee;* and its origin, form, and insertion in that animal agree with those which are met with in the *Orang Utan*. Mr. Owen considers that from its insertion into the under and outer part of the *trochanter major*, and consequently very near to the centre of motion, it can have little effect in drawing the thigh up towards the body as compared with the power of the proper flexors of the thigh. It appears rather to have reference to that structure of the hip-joint which, in the *Orang* especially, from the absence of the *ligamentum teres*, and in the *Chimpanzee*, from the yielding texture of that ligament, permits a greater extent of inward rotation than can be accomplished in man.

The *sartorius* is inserted lower down than in man. The *rectus cruris* corresponds with the same muscle in the human subject; but the *vasti* and *cruræus* are much weaker and thinner, and are evidently little adapted to support the thigh and trunk upon the *tibia*.

The *psoas magnus* and *iliacus internus* are, on account of the form of the *pelvis*, proportionally longer muscles than in man. Beneath them exists a small distinct muscle passing from the fore part of the *ilium*, over and attached to the capsule of the hip-joint, to be inserted into the root of the *trochanter minor*. This muscle is not found in the *Chimpanzee*. The *pectineus* is a narrower muscle than in man, and gives off, in the *Chimpanzee*, a small slip, which is continued under the femoral vessels and outwards to the origin of the *sartorius*. The *gracilis* is a very powerful muscle in the *Orang*, but is comparatively of less bulk in the *Chimpanzee*, in which it is inserted beneath the *sartorius*. On this muscle being removed, a number of others appear passing from the *pelvis* to the inner part of the thigh, among which it is difficult to select those which are precisely analogous to the muscles in the corresponding region of the human subject. Mr. Owen, however, distinguished the *adductor longus*; an accessory *adductor* arising from the upper part of the *symphysis pubis*; the *adductor brevis*; and the *adductor magnus*.

The *gastrocnemius* preserves nearly a uniform thickness and breadth throughout its course, and is continued fleshy down to the *os calcis*: it has no sesamoid bone, as possessed by some monkeys (e. g. *Macacus cynomolgus*, Lacép.), at either of its origins. The *soleus* has only one origin, and is continued fleshy to the *os calcis*. The tendon of the *popliteus* contains, behind the knee-joint, a fibro-cartilaginous sesamoid body, which was noticed by Camper, who states that it exists also in baboons, dogs, cats, &c.: this body, however, is not found in the *Chimpanzee*.

In the *Orang Utan* there are some important differences in the disposition of the flexors of the toes, as compared with the *Chimpanzee* and inferior *Simiæ*; thus the muscle analogous to the *flexor longus pollicis pedis* sends no tendon whatever to the thumb of the foot, and its origin is extended above the knee-joint in a manner analogous to the *flexor sublimis* in the upper extremity. It has two origins, one from the outer condyle in common with the *gastrocnemius internus*, the other from the head of the *fibula*, and is continued down the posterior part of that bone and the interosseous ligament to within an inch of the *tarsus*; under which it passes through a broad synovial sheath, deeper seated than, and external to, the *flexor longus digitorum*; becoming tendinous centrad, but continuing fleshy on the dermal aspect till it has reached the sole. There it divides into two stout perforating tendons, which are inserted into the distal *phalanges* of the third and fourth toes. Immediately after the division each tendon gives origin to a *lumbricalis* muscle, which terminates in a thin *aponeurosis* attached along the tibial side of the proximal *phalanges* of the third and fourth toes.

The *flexor longus digitorum pedis* arises as in the human subject, but continues fleshy till it has passed under the *abductor pollicis;* it then gives origin to a *lumbricalis* muscle, and divides into three tendons. The *lumbricalis* terminates in the middle tendon of the three. The innermost or first tendon goes to the distal phalanx of the second toe; it also gives rise to a *lumbricalis*, which is inserted into the tibial side of the proximal *phalanx* of the same toe. The second tendon, after receiving the insertion of the *lumbricalis* before mentioned, goes to form the perforated tendon of the fourth toe. The third or outer tendon is inserted into the distal *phalanx* of the fifth toe, and also gives origin to a *lumbricalis*, which terminates in the tibial side of the proximal *phalanx* of the same toe.

The *flexor brevis digitorum pedis* arises from the posterior part of the *os calcis*, its fibres passing transversely over the insertion of the *tendo Achillis*. At about two inches from its origin it gives off a small tendon, which is inserted into the second *phalanx* of the second toe. It then continues fleshy for an inch further, and terminates in the perforated tendon of the third toe.

Thus all the toes from the second outwards, have a *flexor* tendon inserted into the distal phalanx: they have also a *lumbricalis* tendon attached to the proximal *phalanx*, and the second, third, and fourth have tendons inserted into the middle *phalanx*. As each perforating tendon gives origin to the *lumbricalis* muscle of its respective finger, these not only assist in the flexion, but act as guys on the tendons, from which they originate, preventing them from starting from the long concavity of the sole over which they travel: they also afford a variety of independent motions to the fingers. The *tibialis posticus* has the usual origin; its tendon passes along a distinct sheath close by the internal *malleolus;* it is inserted into the *os cuneiforme internum.* The tendon has no sesamoid bone where it passes over the *astragalus*. In the *Chimpanzee* it is inserted into the *os naviculare.*

The muscles in front of the leg are covered with a strong *fascia*, into which the tendons of the *semitendinosus* and *biceps* are inserted; it affords origins for the muscles situated beneath it, and becomes very strong at the ankle, binding down and forming sheaths for the several tendons. The *tibialis anticus* arises from the anterior inner and posterior aspects of the *tibia*, embracing it, as it were, and giving the appearance of a rickety convexity to the leg; it passes over the *malleolus internus* posterior to the centre of motion, and is consequently an *extensor* of the foot; it also turns the sole inwards. In close connection with this arises another muscle, not found in man; it becomes tendinous about three-fourths down the leg, and is inserted into the base of the metatarsal bone of the thumb, which it extends: this muscle is found in the *Chimpanzee*, and also, according to M. Cuvier, in the inferior *Simiæ*. The *extensor longus pollicis* makes its appearance as usual between the *tibialis anticus* and *extensor longus digitorum;* it is inserted into the base of the *phalanx:* (the female specimen that was dissected had only one *phalanx* to the hinder thumb). The *digitorum tensor longus* has the usual origin, continues fleshy to the ankle-joint, there divides into three tendons, which diverge at the middle of the foot, and are attached to the third, fourth and fifth toes; each tendon expanding into a sheath over the back part of the *phalanges.*

The *extensor brevis digitorum pedis* arises from the *os calcis,* and divides into three portions; the strongest of which gives two tendons to the second toe, one being inserted at the base of the proximal *phalanx,* the other expanding over the second and distal *phalanges* like the tendons of the *extensor longus.* The remaining portions go to the fibular aspect of the third and fourth toes.

The *peroneus longus* and *brevis* arise together from the outer, fore, and back part of the *fibula;* on the latter aspect they are in connection with the *flexor longus pollicis.* The tendon of the *peroneus brevis* is inserted into the base of the metatarsal bone of the little toe. The tendon of the *peroneus longus* passes under the cuboid bone, without the interposition of a sesamoid bone, crosses the foot, and is implanted into the metatarsal bone of the thumb of the hinder hand, of which, as far as the structure of the articulation will permit, it is a *flexor.* There is no *peroneus tertius.*

The thumb is very short, consisting, in the female at least, of only two bones, set on at right angles to the foot, and at a great distance from the toes. In this part, however, the power of a considerable muscular apparatus is concentrated. Receiving no tendon from the *flexor longus pollicis,* it is rendered more independent in its actions; not being necessarily flexed, except in the action which turns down that side of the foot to which it is attached, and by which it is brought closer to the object to be seized. On the sole of the foot we find an *abductor* and an *adductor pollicis,* both powerful muscles inserted at very open angles into the *phalanx;* which, when they cooperate in their contraction, they must draw down in the diagonal with great force. Between these are situated two more direct *flexors,* constituting what is usually termed the *flexor brevis pollicis.*

The space between these muscles, which in man and the *Chimpanzee* is filled by the tendon of the *flexor longus pollicis,* in the *Orang Utan* is occupied by a small peculiar muscle which arises from the metatarsal bone, and is inserted into the *phalanx.* In a young male *Orang* that had two *phalanges* the *flexor brevis* was inserted partly into the second *phalanx.* The *extensor brevis pollicis* arises from the *os naviculare* and *os calcis,* and is inserted into the base of the proximal *phalanx,* when there are two.

On the *dorsum* of the foot may also be observed *interossei externi* of a penniform shape; they are attached to the fibular aspect of the proximal *phalanges* of the toes. There was also an *adductor minimi digiti,* and *interossei interni,* but not any trace of *transversalis pedis.*

Mr. Owen concluded his observations with some remarks on the structure of the principal joints of the lower extremity, and on the degrees of mobility of which they are susceptible.

In the hip-joint the most remarkable circumstance is the freedom of motion in the rotation inwards; this is, however, more limited than in the opposite direction. The motions of flexion and extension, abduction and adduction, are also very free. On examining the cause of the limitation of the inward rotation, he found it to be a strong band of ligamentous fibres arising from the posterior margin of the cotyloid cavity, and passing along the back part of the capsule to the root of the great *trochanter;* when this was divided the rotation inwards was as free and extensive as happens in other cases after a division of the *ligamentum teres.* The synovial membrane is reflected over a greater part of the anterior and upper than of the back and under part of the *cervix femoris.* The marginal ligament of the articular cavity is four lines in depth, a remarkable thickness for the size of the cavity. The blood-vessels enter the joint by the usual notch, and supply abundantly the process of synovial and adipose substance called the gland of Havers.

The motion at the knee-joint is sufficiently free to allow the heel to be brought to the buttock, and even beyond, as in natural flexion it is carried external to the thigh. The only circumstances remarkable in the structure of the joint are, that the internal lateral ligament is longer, and the *ligamentum mucosum* stronger and of a more ligamentous nature, than in the human subject.

The motion at the ankle-joint is so free, that the *dorsum* of the foot can be brought into apposition with the fore-part of the leg; and it is worthy of remark, that when this motion is produced, the effect on the tendons passing behind the ankle-joint is such, as to cause a flexion of the toes similar to that which is produced in perching birds by bending the *tarsus* upon the leg. In the opposite direction the foot may be brought so far back as to form a right angle with the leg. Lateral motion is also very free, especially the turning of the sole inwards, to which aspect it naturally inclines. A certain degree of motion is allowed between the first and second set of tarsal bones. The ligaments of the ankle-joint are disposed as in the human subject, one at the inner and three at the outer side.

The ligaments that connect the metatarsal bone of the thumb to the internal cuneiform bone, are two in number, one at the upper and the other at the lower or plantar aspect; these limit the motions of flexion and extension, but allow very freely abduction and adduction. From this circumstance when the *peroneus longus* acts on the foot in turning the sole outwards, its tendency to bend the metatarsal bone upon the foot is resisted, and this bone is rendered a fixed point without the necessity of the counteraction of a muscular antagonist.

May 31, 1831.

N. A. Vigors, Esq. in the Chair.

At the request of the Chairman, Mr. Gould exhibited a specimen of the male of the *Urogallus medius;* the *Tetrao hybridus* of Gmelin and Dr. Latham, and the *Tetrao medius* of M. Temminck.

Mr. Yarrell observed that this individual, with one other example of the same rare species, also a male, was found among a considerable number of the *Tetrao Urogallus* of both sexes, brought from Norway by a boat partly laden with lobsters for the London market. Some of the older writers considered this bird to be a hybrid produced between the *Wood Grouse* and the *Black Grouse*, and had named it accordingly: modern authors have, however, established its distinction as a species; and the female and its egg are now known. Notwithstanding the general resemblance between these two large *Wood Grouse* they are decidedly and very obviously different. In the *Tetrao medius* the beak is black; the shining feathers on the front of the neck and breast are of a rich Orleans-plum-colour; and of the 18 feathers of the tail the outer ones are the longest. In the *Cock of the Wood* the beak is white; the feathers on the front of the breast are of a dark glossy green; and the centre feathers of the tail are the longest.

The organ of voice in the *Tetr. medius* is peculiar. The *trachea* of this bird and that of the *Tetr. Urogallus* were exhibited; and Mr. Yarrell pointed out that the *trachea* of the *Tetr. medius*, eleven inches in length, has no loose fold, like that of the *Tetr. Urogallus*, but descends in a straight line to the lungs. From the thyroid cartilage two pairs of muscles follow the course of the *trachea*, one pair firmly attached to the *trachea* itself, the second pair suspended loosely in the cellular tissue. Both these pairs of muscles, after an extent of eight inches, are lost in a membranous expansion, forming a sheath, which invests the inferior fourth portion of the *trachea*, and from which sheath one muscle only on each side is sent off, immediately above the bifurcation of the *bronchiæ*, to be attached to the inner surface of the *sternum*.

The stomach is a true gizzard of great muscular power, and the intestines and *cæca*, as in all the *Grouse* tribe, are very long: the *cæca* in the present instance measured each three feet in length.

There is reason to believe that this bird inhabits the Apennines as well as the more northern localities assigned to it. Mr. Fox in his 'Synopsis of the Newcastle Museum' quotes a note of the late Mr. Tunstall which states that "he knew some old Scotch gentlemen who said they remembered, that when young, there were in Scotland both the *Cock of the Wood*, and the *Tetr. hybridus*."

Mr. Yarrell availed himself of the opportunity to state that the hybrid *Grouse* of White's 'Natural History of Selborne' is believed to be a young *black Cock*, having nearly completed his first moult. He added that he was indebted to Mr. Sabine for the information that the *Tetr. rupestris* of Pennant's 'Arctic Zoology' has been killed in Perthshire, and that the specimen is preserved in the collection of Lord Stanley, the President of the Society.

At the request of the Chairman, Mr. Martin referred to the notes of the dissection of a specimen of *Testudo Græca* which he had laid before the Committee on the 26th of April, and stated that the correctness of these notes had been subsequently confirmed by the examination of another individual of that species, in which he had observed the same lengthened form of stomach; similar intestines; and a *cæcum* agreeing with that previously described. The urinary bladder also corresponded in form and size. The *trachea* bifurcated in the same manner; and the *bronchiæ* had the same remarkable sigmoid flexure, and were furnished with the compressing muscle which he had before noticed.

Mr. Owen remarked that he had ascertained the existence of a *cæcum* in another species of *Tortoise*, (*Emys concentrica*, Leconte,) which he had recently dissected.

The preparation of the *cæcum* of the *Testudo Græca* having been laid upon the table, it was pointed out that the part so termed in this instance consisted of a pouch formed by the oblique insertion of the small into the large intestine, the upper end of the latter being dilated as in the human subject into a *cæcum caput coli:* but that it by no means corresponded with the *cæca* of birds, and might almost be regarded as wanting when contrasted with the developement of the same part in some of the *Ophidian Reptiles*, as in the genera *Python*, *Boa*, &c.

A living individual, apparently referable to the *Gulo barbarus*, L., was exhibited. It was presented to the Society by Edmonstone Hodgkinson, Esq. of Trinidad, who describes it as being "playful and gentle, although easily excited, and very voracious. It is exceedingly strong, as is indicated by its shape; and it has the same antipathy to the water as a cat." Mr. Hodgkinson suspects that it is a native of Peru. He obtained it in Venezuela, where it was presented to him by the President, General Paez. The name he received with it was "the *Guache*;" but this appellation, it was observed by Mr. Bennett, was probably erroneously applied to the present animal, belonging rather to the *Coati*, the orthography of which is variously given as *Coati*, *Couati*, *Quasje*, *Quachi*, and *Guachi*. The latter form occurs in the 'Personal Narrative' of the Baron Von Humboldt, where it evidently refers to a nocturnal species of *Nasua*.

The form and general appearance of the animal were remarked to be altogether those of a *Mustela*, to which genus it is probable that it should be referred, together with the typical *Gulo barbarus*. A specimen of the latter was placed upon the table, from which the living animal was shown to differ by the absence of the large yellow spot beneath the neck: a remarkable distinction in this group, but on the occurrence of which, unless confirmed by several specimens, it was considered improper to propose regarding it as a distinct species.

A stuffed specimen and a skeleton of the *Acouchy* (*Dasyprocta Acuschy*, Illig.) having been laid on the table, the following notes on the anatomy of that animal were read by Mr. Owen.

"The subjects examined were the male and female *Acouchies* which were exhibited to the Committee on the 23d of November last by Mr. T. Bell, in whose possession they remained alive till May, when they both died in one of the remarkably cold nights of that month.

"The following circumstances were common to both animals.

"On laying open the cavity of the *abdomen* the intestines were found to be generally adherent to each other and to the *parietes* of the cavity, arising from recently effused lymph: they were also of an unusually dark colour, owing to their contents.

"The stomach consisted of a simple cavity, of a full oval shape, without any contraction between the cardiac and pyloric portions. The *œsophagus* had a course of nearly an inch within the *abdomen* before its termination. This is a circumstance worthy of notice, and which occurs in a marked degree in most of the *Rodentia*. The inner cuticular membrane of this part terminated abruptly at the *cardia*. The villous coat of the stomach was without *rugæ*, and of a gray colour, whilst that of the intestines immediately beyond the *pylorus* was stained of a very dark colour; showing that the *pylorus* had acted as a very effectual valve.

"The *cæcum* was of a capacious size, and had the same sacculated appearance as in the *Guinea-pig*; it occupied the whole of the iliac, lumbar, and part of the hypochondriac regions of the right side, and was disposed in a sigmoid form; the *colon* at its commencement followed the curvatures of the *cæcum*, and was attached to it by a continuation of the peritoneal membrane; about six inches from the *cæcum* the *fæces* became divided into pellets. The *cæcum* itself was filled by a black tough pultaceous mass, of a slightly acid odour; and the same coloured matter, but in a more fluid state, was contained in a greater or less quantity throughout the small intestines.

"The liver consisted of four principal divisions and a *lobulus Spigelii*; the gall-bladder was imbedded in a cleft in the right division, and contained a small quantity of dark-coloured watry fluid. The *pancreas* consisted of two separate lobes. The spleen was of a very dark colour, pointed at the lower extremity, and about one inch and eight lines in length.

"The kidneys were prominently situated in the hypochondriac regions, the right being nearer to the diaphragm by one half its length than the left. Each was about one inch in length and conglobate. The supra-renal glands were of an oval shape, six lines by two in their dimensions, situated anterior to the upper extremities of the kidneys, but unattached to them; the right closely adhering to the *vena cava inferior*, the left to the *vena emulgens* of its own side.

"The *viscera* of the chest, like those of the *abdomen*, presented traces of general inflammatory action.

"The lungs were divided into three lobes on the left side and four on the right, the fourth being the *lobulus medius seu impar*, occupying the space between the *pericardium* and diaphragm. The heart terminated obtusely, with a slight indication of a double *apex*. The *aorta* gave off the carotids and the subclavian arteries by a common trunk.

"The rings of the *trachea* were incomplete, their extremities being separated behind by a small space.

"The cricoid and arytenoid cartilages were of large size as compared with the thyroid; the *apices* of the latter were continued into each other; the *chordæ vocales* were very short but distinctly marked, and with a small *sacculus* on each side. There were no cuneiform cartilages; the *epiglottis* was triangular with the *apex* prolonged into a small *mucro*. Viewed from above, the aperture of the *larynx* was circular, and was directed from behind forwards. The tongue was subacuminate, minutely papillate above, with a middle longitudinal line extending half an inch from the tip: it had no elevated posterior part as in the *Guinea-pig, Beaver, Hare*, &c. but at the root of the tongue there were numerous elongated cuticular processes, and on each side of the *fauces* a fold of membrane, whose action is evidently to obviate too rapid transmission of the food through the *fauces*.

"In the male the *testes* were found within the *abdomen*, with the extremity of the *epididymis* projecting through the abdominal ring; but as the whole gland could be pushed with ease through the aperture, the *Acouchy* cannot be considered one of the true *testiconda*. The *levatores penis* were very distinct, arising from the upper part of the *pubes* and terminating in tendons which ran along the convexity of the *dorsum penis* to the *glans*.

"In the female the ovaries were found of very small size and apparently in a scirrhous state.

"In both there were small clavicular bones, about the thickness of a small pin, and eight lines in length, which were connected by a ligament of the same length to the *sternum*. Their office appeared to be to afford a fixed point of attachment to a muscle arising from the transverse processes of the cervical *vertebræ* analogous to the *levator claviculæ* in *Apes*, and to give origin to part of the deltoid, by which it is better adapted to draw forwards the *humerus*."

The following notes on the anatomy of the *Thibet Bear* (*Ursus Thibetanus*, F. Cuv.) were also read by Mr. Owen. The subject examined was a young individual which had lived about two years in the Society's Garden.

"An extensive abscess was found under the *scapula*, which appeared to have communicated with the cavity of the chest; but the lungs, heart, and liver having been removed before the animal came under my hands, I had no opportunity of ascertaining the connection it had with diseases of those parts.

"The length of the animal from the nose to the root of the tail was 3 feet 4 inches: that of the intestinal canal 33 feet. Every part in the *abdomen* was loaded with fat. The stomach resembled the human in shape, and had a well marked contraction between the cardiac and pyloric portions; the muscular *parietes* of the latter were half an inch thick; and, as in the *Bears* generally, had a tendinous appearance externally on each side. The intestines were simply villous internally. The biliary and pancreatic secretions entered at a distance of four inches from the *pylorus*. There were four or five longitudinal *rugæ* in the terminal six feet of the intestinal canal; and the diameter was smallest at this part. There was no *cæcum*, nor any valvular apparatus in any part of the intestinal canal.

"The anal follicles were two in number of the size of hazel-nuts. One of them was filled tensely with a yellowish-brown cheesy substance, which had a strong acetous odour; the contents of the other were of more fluid consistence, but had the same odour; the excretory orifice was just capable of admitting a common probe; the lining membrane was thin, of a white colour, but not so distinctly cuticular as is commonly found; it resembled more the lining membrane of the urinary bladder. Each follicle was surrounded by the fibres of a muscle which was inserted into the *crus penis*.

"The spleen was of a trihedral shape, 7 inches in length, 1½ in breadth, of a light mottled pink colour and granular texture; the splenic vein contributed to form the *vena portæ* in the usual manner. The *pancreas* was of about the same size as the spleen; but the pyloric portion bent at right angles with that which passed behind the stomach.

"The kidneys consisted each of about thirty lobules. The ureters terminated separately but close together at the neck of the bladder. The urinary bladder was a narrow oblong bag, and about half an inch of the *urachus* still remained permeable from the *fundus vesicæ*.

"The tongue was long, broad, and thin at the extremity, with the edges turned down. On the upper part was a longitudinal mesial groove extending four inches from the tip. The surface was universally papillose, and with the simple *papillæ* were intermixed numerous small white petiolate *papillæ*. At a distance of five inches from the tip there were eleven large fossulate *papillæ*, forming two sides of a triangle whose *apex* is towards the *epiglottis*. Nearer to the *epiglottis* were numerous cuticular pointed processes directed backwards. The *lytta*, or worm of the tongue, was 5 inches in length, about the thickness of a crow quill, and bent upon itself near its middle part: it had fibres of the *linguales* muscles inserted into its anterior extremity, but laid loosely for the rest of its extent among the cellular texture in the interval of the *linguales* and *genio-glossi*. The *velum palati* was terminated at its lower margin by a short bifid *uvula*, the *azygos uvulæ* consisting here of two quite distinct muscles."

A pair of the middle tail-feathers of the *Phasianus Reevesii*, Hardw. and Gray, (*Phas. veneratus*, Temm.) were exhibited; for one of which the Society is indebted to the liberality of John Reeves, Esq., of Canton. These feathers measured each about five feet six inches in length. The bird from which they were obtained is the first individual of this rare and magnificent species ever brought alive to Europe. It was presented to the Society by Mr. Reeves, and is now living at the Garden in the Regent's Park. A second individual died on the passage to England.

The Report on the animals for the importation of which the Council should be recommended to take measures, which was adopted at the Meeting of the Committee of the 22d of March, having been submitted to the Council and approved of, was ordered to be printed. It is as follows:—

Report of the Committee of Science and Correspondence to the Council.

March 22nd, 1831.

THE Committee of Science and Correspondence, having taken into consideration the request of the Council, that they should prepare a Report upon the Animals most desirable to be introduced into this country for the purposes of utility or exhibition, beg leave to submit a List of such Animals arranged under the heads of the respective countries of which they are natives. The selection of these countries has been made upon the principle of particularizing those in which the political, commercial and scientific interests of England have established such correspondents as are likely to exert themselves in forwarding the views of the Council.

The Animals most desirable for the purposes of utility may be severally considered as they are likely to supply the objects of food, clothing, medicine, or draft.

The Committee recommend to the primary consideration of the Council the first class of these animals, or those which are serviceable for food, as being by nature most capable of domestication, most prolific, and best able to bear the vicissitudes of climate. As their food also is for the most part vegetable, they can be readily supplied with it in their transmission to this country, and in confinement afterwards. The Animals referred to under this character include the greater part of the *Ruminant* or *Hoofed* order among the *Mammalia,* and the *Gallinaceous* order among *Birds*; the former comprehending the various species of *Deer, Antelopes, Oxen, Sheep, Goats,* &c.; and the latter the numerous species of *Pigeons, Turkeys, Guinea Fowls, Jungle Fowls, Pheasants, Grouse, Partridges, Quails,*the *Struthious Birds, Curassows, Penelopes, &c.* And to these may be added a few species from the *Rodent* order of the *Mammalia,* such as *Hares, Rabbits, Agoutis, &c.*; and a few from the *Natatorial* order of *Birds,* as *Ducks, Geese, Swans, &c.*

In thus particularly directing the attention of the Council to the above-mentioned groups, the Committee are not equally sanguine of success in the attempt to naturalize all. Climate in many instances has an evident influence in advancing or retarding this object. Many species of *Deer* for example, the inhabitants for the most part of northern latitudes or of high elevations in southern, breed freely in this country, while the *Antelopes* and *Musk Deer* of Africa and India, although closely allied to the *Deer,* have been found, with scarcely an exception, incapable of enduring our colder temperature. On the other hand the influence of climate appears in many cases either not to have been felt or to have been counteracted; the *Pheasant* and *Jungle Fowls* of India, for instance, and the *Guinea Fowls* of Africa, having been naturalized among us with equal success as the

Turkey of the temperate parts of America. The habits of migration, also, which are peculiar to many of the above-named groups, oppose an obstacle to their bearing confinement as the period of migration approaches: while, from causes hitherto unexplained, various others, even among our indigenous species, although hardy and prolific in a state of freedom, will not breed nor indeed live for any length of time in a state of captivity. The Committee nevertheless are unwilling to make any exceptions in their previous recommendation to introduce the whole of these Animals. The endeavour to counteract the natural causes that may in the outset operate against success will afford many points of interesting inquiry; and the very failure of the attempt will supply the philosophic investigator of nature with as important facts for his speculations as actual success.

The Committee do not augur many favourable results from the attempts to introduce such Animals as are useful for clothing. A colder climate than ours seems requisite for the full development of the fur in such Animals as the *Sable, Chinchilla, Lynx, Bear,* &c., and of the down in the *Swans, Eider Ducks,* &c. It is doubtful also on the other hand whether a warmer climate may not be equally necessary for the production of feathers among the *Struthious* and nearly allied *Birds,* in such quantity and of such quality as may be useful. Still the same observation may be applied to all these species as to the preceding. The trial will tend to establish a fact which, although likely to be a negative one, will furnish authentic ground, hitherto wanting, for the inferences of the physiologist. Our temperate climate however seems congenial to the growth of wool and hair. And with reference to this tendency the Committee recommend the introduction of all such species of *Sheep* and *Goats,* as are not natives of the British Islands, or of such varieties of the indigenous species as may tend to improve or vary the quality of their covering.

The Animals hitherto known as useful for medicinal purposes are few in number, appearing limited to the *Beaver,* which supplies the antispasmodic medicine, called castor; to the *Civet,* and the *Musk Deer.* The introduction of all these Animals is recommended by the Committee, not so much in the expectation of their affording any supply of their peculiar produce, as with the object of ascertaining the physiological fact whether confinement will alter the nature or quantity of that produce.

In referring to the Animals useful for the purposes of draft, the Committee are aware that little improvement can be effected in this object, beyond what has already been attained in this country. Every climate has its native beast of burthen most suited to its own character, and no animal, however superior in general organization, could supersede to advantage the use of the *Rein Deer* in Lapland; the *Camel* in the deserts of Africa; the *Llama* in the mountains of Peru; or the *Horse* and *Ox* in more temperate latitudes. On a limited scale, however, the Committee recommend the introduction and training of Animals suited to this purpose. Some of the larger species of *Deer,* such as the American *Moose* and *Wapiti,* and the Swedish *Elk,* the various foreign species of *Bos,* all the species of *Llamas,* and of the *Solipede Animals,* such as the *Zebras, Quaggas, Dzettais,* &c. would afford interesting subjects for the trial. The attempt would probably disappoint the hopes of the utilitarian, but it would afford abundant scope for the speculations of the naturalist.

The Committee feel some hesitation in proceeding to the recommendation of Animals for exhibition. It is difficult to make a selection where all are objects of general attraction, as exhibiting their structure in perfection, as well as their native habits and economy, and where equally all are desirable as objects of science to the physiologist and comparative anatomist. In this point of view it would perhaps fall more within the province of the Committee to point out such Animals as from their previous introduction into this country are no longer wanted, than to particularize what are. They venture, however, to make a partial selection, and to annex to the respective localities, where the correspondents of the Society are established, a list of what appear to them to be the less known and more attractive of the native species of each: observing, that they generally place those species first in order, which they would first recommend to the attention of the correspondent. They wish to add as a general recommendation, that those Animals should be selected for transportation to this country, which have been previously domesticated, or at least accustomed to confinement in their own; and they suggest to those correspondents who may have leisure and inclination to attend to the rearing of Animals, to bring up those which are intended for the Society, as much as possible from the earliest stages. As many animals suffer much from solitary confinement, it is desirable that they should be brought over in moderate numbers, and whenever attainable that they should be of different sexes.

In reference to the mode of treatment of Animals during their passage to England, the instructions of the Committee must necessarily be very general; much depending on the particular character of the Animal, and the extent of the accommodation capable of being afforded. It may generally however be suggested that correspondents should engage some individual of the ship's company to take especial charge of the Animals on board, and guarantee to him a handsome recompense on his bringing them safely to their destination. Great attention must necessarily be paid to their being kept constantly warm, dry, and in a clean condition; and a more watchful care should be bestowed upon the Animals of southern latitudes as they approach the colder climates; many valuable specimens being constantly lost by the abrupt change of temperature. Their food must be an object of primary consideration, a sufficient stock of such as is appropriate to the several species being laid in previously to their embarkation. A constant supply of fresh water is indispensably necessary, and gravel should be at all times within the reach of the *Gallinaceous* and the *hard-bill'd Birds.* In case of the failure of the more general food of these latter Animals, and of the graminivorous *Mammalia,* the common biscuit of the ship's store will afford an adequate substitute. It is in general more difficult to bring home the *soft-bill'd Birds,* or those which partially require a supply of animal food, such as *Thrushes,* *Warblers*, &c. but even these with due attention may be safely conveyed to this country. Fresh meat finely scraped, hard eggs cut into small pieces, bread, biscuit, or barley meal, mixed with milk, or with water in which fresh meat has been boiled, will afford a nutritious, and at most times an available food: when pounded and mixed more or less together, until they assume the consistence of paste or honey, these ingredients will suffice even for the most delicate of the *Warblers*. *Ants'-eggs*, which are abundant in all tropical climates, may be preserved in a jar well tied down, and with the addition of the *Blattæ* or *Cock-roaches*, so generally attainable on board ship in all their stages of growth, and of the *Meal-worms*, which are equally abundant in the bread-room, they will occasionally afford an acceptable treat to these birds on their voyage. It is even to be hoped that, with due attention to their wants, the *Humming Birds* of America may be brought to this country and be exhibited in our conservatories. It has been ascertained that they can be supported for some time at least in confinement on honey or sugar and water; and a further trial may with some prospect of success be attempted to introduce them, as well as all the corresponding groups of *Meliphagous Birds* of Australia and the old world.

The Committee do not wish to include in the present Report any reference to the subject of the importation and breeding of *Fish*. The subject is one which requires much inquiry at home, and still further correspondence abroad. And as the plans of the Society are not yet sufficiently ripe for entering upon any practical experiments, the Committee think it advisable to reserve their observations on this subject, which in the present state of their information would necessarily be imperfect, for a future and a separate report.

There are various other Animals, not included among the foregoing groups, which would be highly acceptable to the Society, but which the Committee do not include in the list submitted to the Council, lest they should appear to overload it with too many and too particular recommendations. They will therefore refer to them generally. Many of the *Reptiles* would be valuable; more particulary the different species of *Tortoises* and *Lizards*. Some of the *Molluscous Animals* also might be introduced with advantage and interest, such as the larger *land Snails*, and the *freshwater Bivalves*. Various *Insects* also, the foreign species of *Bees* for example, with their nests, and the larger silk bearing *Moths** of India and North America, if imported in a living state, would be so many accessions to science. All these and similar animals might be easily kept alive in our conservatories, and in addition to their scientific value would be objects of extreme attraction. *Eggs* of birds also, carefully packed in some soft substance with either end upwards, may be sent to this country, with some prospect of an advantageous result. But the Committee must content themselves with this general reference and recommendation, and leave the following-up of the suggestions to the kindness and discretion of the friends and correspondents of the Society.

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* Moths should be sent over in the pupa state.

Before they close these introductory observations of their Report, the Committee beg earnestly to press upon the Council the recommendation that instructions be given to all persons in charge of Animals, to preserve entire in spirit the body of every species which may chance to die on the passage. If spirit is not easily procured, strong brine will in most cases answer as a substitute; and in case of its being difficult to preserve the soft parts, the bones would be highly valuable. An attention to these suggestions would occasion little expense, and the labour would be trifling; but the value of the additions thus likely to be made to the materials of Science is incalculable.

AMERICA.

York Factory and Quebec.

Rocky Mountain Sheep.
Rocky Mountain Goat.
Prong-horned Antelope.
Musk Ox.
Grisly Bear.
Beavers.
Deer of all kinds (Wapiti excepted).
Wolverene.
Lynx.
Hares.
Foxes.
Marmots.
Flying and other Squirrels.
Weasels.
Star-nosed Moles.
Canada Porcupine.
Ondatra, or Musk Rat.
Carcajou, or Badger.
Jumping Mouse.

Grouse of all species.
Californian and other Quails.
Swans (excepting the Hooper).
King Ducks.
Eider Ducks.
Jays.

United States.

Virginian and other Deer.
Foxes.
Black and other Wolves, including Prairie Dog.
Squirrels of all kinds.

Wild Turkey.
Virginian Quails.
Jays.
Mocking Thrush.
Stares and Troupiales.
Hard-billed birds of all sorts.
Turkey Buzzard.
Canvas-backed Ducks.

And generally such of the Quadrupeds and Birds, mentioned under the preceding head, as can be procured.

West Indies, Demerara, Cuba, &c.

Capromys, or Hutias, of all species.
Armadillos, ditto.
Agoutis, ditto.
Acouchis.
Gallinules.
Whistling Ducks.
Doves of all sorts.

Mexico, Honduras, Vera Cruz, &c.

Deer of all kinds.
Small or burrowing Dog called Chiwawa.
Cayopollin and other Opossums.
Tiger-cats of all kinds.
Ocellated Turkey
Quails.
Jays.

SOUTH AMERICA.—Pernambuco, Rio Janeiro, &c.

Mountain Tapir (from the Andes).
Grison.
Monkeys, (particularly Howlers and Lion Monkeys).
Sloths.
Agoutis.
Armadillos of all kinds.
Deer, ditto.
Kinkajou.
Foxes.
Ocelots.
Margay and other small Cats.
Opossums of all kinds.
Hares.
Coypu.
Capybara.
Ant-eaters.
Tree Porcupines.
Trumpeters.
Curassows.
Tinamous.
Penelopes.
Rhea or Nhandu Ostrich.
Screamer.
Dicholophus, or Cariama.
Roseate Spoonbill.
Scarlet Ibis.
Jabiru.
Flamingo.
King Vulture.
Quails of all kinds.
Humming Birds.

Buenos Ayres, Falkland Isles and Straits of Magellan.

Hares.
Foxes.
Cavies.
Swans.
Geese.
Ducks.
Quails.
Humming Birds.

WESTERN COAST, SOUTH AMERICA.—Santiago, Lima, &c.

Vicugna.
Chinchilla.
Viscaccia.
Deer of all kinds.
Foxes ditto.
Chlamyphorus, or Pichichiago.
Coypu.
Birds before mentioned from Straits of Magellan and Juan Fernandez.
Condor Vulture.

WESTERN COAST, NORTH AMERICA.

Sheep.
Deer.
Wolves.
Foxes.
Squirrels.
Sea Otter.
Weasels.

Californian Vulture.
Californian Quails.
Douglas' Quails, and others.
Jays of all kinds.

EUROPE.

PETERSBURGH.

Sables.
Alpine Hares.

NORWAY AND SWEDEN.

Elk.
Reindeer.
Lynx.
Swedish Hare.
Lemmings.

Capercailzie.
Grouse of all kinds.
Jerfalcon.

SWITZERLAND.

Chamois.
Ibex.
Marmots.

Bearded Vulture.
Black Vulture.

GIBRALTAR, MALTA, &c.

Monkeys.

Bustards.
Francolins.
Red-legged Partridges.
Quails.
Purple Gallinules.

AFRICA.

ALEXANDRIA, TRIPOLI, &c.

Giraffe.
Fennec.
Hyrax.
Ichneumon.
Barbary Mouse.
Gazelles.
Jerboas.
Hippopotamus of Upper Egypt.
Genettes.
Booted Lynx, and smaller Feline Animals.
Wolves and Foxes.

Sacred Ibis, or Abou-hannez.
Percnopterus, or Pharaoh's Chickens.
Bustards of all kinds.
Demoiselles.
Marabou Cranes.
Francolins.
Sand Grouse.
Red-legged (Greek) Partridge.

MOGADORE, SIERRA LEONE, FERNANDO PO, &c.

Fasciculated Porcupine.
Chimpanzee and other Monkeys.
Antelopes.
Galagos, or Gum Animals.
Potto.
Genettes.
Pangolin or Manis.
Touracos of all species.
Plaintain-eater.
Francolins.
Sand Grouse.
Marabou Cranes.

CAPE OF GOOD HOPE.

Two-horned Rhinoceros.
African Elephant.
Hippopotamus.
Antelopes of all kinds (Gnu excepted).
Ethiopian Hog.
Variable Mole.
Ratel.
Suricate.
Painted Hyena.
Cape Ant-eater.
Caffrarian Ox.
Quagga.
Aard Wolf (Proteles).
Genettes.
Serval, or Bosch-kat.
Pedetes, or Spring-Haas.
Hyrax.
Mole Rats.
Secretary Bird.
Bustards of all kinds.
Flamingo.
Crested Guinea Fowls.
Mitred ditto.
Touracos.
Vultures of all kinds.
Eagles.
Francolins or Partridges of all kinds.

MADAGASCAR, MAURITIUS, &c.

Macaucos of all kinds.
Tenrecs of different sorts.
Cheiromys, or Aye-aye.
Fossane.
Sus larvatus (Native Hog).
Indri.
Vansire.
Spoonbills with red bill and legs.

ASIA.

BOMBAY.

Monkeys of all kinds.
Deer, ditto.
Flamingo from Cambay.
All Pheasants and Gallinaceous Birds.
Florican and other Bustards.

CEYLON.

Asiatic Elephant.
Monkeys.
Slow Lemur.
Slender Lemur.
Meminna Musk Deer.

Jungle Fowls.
Gallinaceous Birds of all kinds.

MADRAS AND CALCUTTA.

Asiatic Lion and Lioness.
Arctonyx (or Sand Hog).
Small Feline Animals.
Pangolin, or Manis.
One-horned Rhinoceros.
Panda or Chitwa.
Deer of all kinds (except Axis and Samboo).
Chiru Antelope.
Isabella Bear of Nepâl.
Bandycoot Rat.
Malabar and other Squirrels.
Flying ditto.
Musk Deer of Thibet.
Thibet Bear.

Cassowary.
Adjutant.
Cyrus Crane.
Stanley or Paradise Crane.
Jungle Fowl.
Florican and other Bustards.
Pheasants from Nepâl of all kinds.
Pondicherry and other Vultures.
Ducks and Teal.

SUMATRA AND JAVA.

Malay and Bornean Bears.
Indian Tapir.
Long-armed Apes and other Monkeys.
Civets and Genettes.
Orang Utan.
Sumatran Rhinoceros.
Flying Squirrels.
Panda.
Benturong.
Mydaus or Telagon.
Tupaias.
Gymnura.
Prionodon, or Delundung.
Small Feline Animals.
Rimau Dayan Tiger.
Pangolin or Manis.
Tarsier.
Musk Deer of all kinds.
Flying Macaucos (Galeopithecus).

Crowned Pigeon.
Nicobar ditto.
Pigeons (various).
Fire-backed Pheasant.
Argus ditto.
Two-spurred Peacock.
Javanese Peacock.
Rouloul.
Jungle Fowl.

CHINA.

Monkeys, Deer, and all wild Quadrupeds.

Pheasants of all kinds, except Gold and Silver.
Mandarin and other Teal.
Fishing Pelicans.

AUSTRALIA.

Sydney, Van Diemen's Land, Swan River, &c.

Ornithorhynchus.
Echidna.
Wallabee and Kangaroos of all sorts (common excepted).
Kangaroo Rats.
Opossums of all kinds.
Flying ditto or Phalangers.
Wombat.
Coala.
Dasyurus ursinus.
Thylacinus Harrisii.
Menura superba, or Tree Pheasant.
Black Cockatoos.
Parrots of all kinds.
Quails.
Bronzed-winged, Magnificent, and other Pigeons.
Large Alectura, called New Holland Vulture by Dr. Latham.
Dollar Birds.

POLYNESIAN ISLES.

Papuan Hog.
Deer of Marianne Islands.
Babyroussa.
Phalangers.
Megapodius.
Birds of Paradise.

From each of the above localities the smaller Quadrupeds, such as *Rats, Mice, Shrews, Moles*, &c.; and the smaller Birds, especially the hard-billed species; would be desirable, as likely to include subjects of considerable scientific interest.

June 14, 1831.

Joshua Brookes, Esq. in the Chair.

A letter addressed to the Secretary of the Society by Charles Telfair, Esq., Corr. Memb. Z. S., dated Port Louis, December 15th, 1830, was read. It referred to previous unsuccessful attempts on the part of the Society's valuable correspondent to transport from the Mauritius to England living *Gouramies* and *Tanrecs*, and promised a repetition of the experiment. Mr. Telfair states that he has now a pair of living *Tanrecs* fully grown ready to send to England when he can place them under proper care. "They live on boiled rice, but will probably not exist long upon that alone, as their natural food is chiefly composed of worms, insects, lizards, and the eggs of snails, of which it would be difficult to carry a sufficient supply in a living state on board ship. Fresh supplies might, however, be obtained at Madagascar or the Cape of Good Hope, at St. Helena, Ascension, and the Cape de Verd Islands; and the animals might thus arrive in good health in England, where they would probably survive for some time burrowing under a dungheap, or living in straw in a hot-house or green-house. An opportunity would thus be furnished of observing their habits. In the Mauritius they sleep through the greater part of the winter, from April to November, and are only to be found when summer heat is felt, which being generally ushered in by an electric state of the atmosphere, the negroes (with whom they are a favourite food) say they are awakened by the peals of thunder which precede the summer storms or 'pluies d'orage.' Even in summer they are not often seen beyond the holes in which they burrow, except at night. Their favourite haunts are among the old roots of clumps of bamboos. They have a very overpowering smell of musk at all times, which is increased to an extraordinary degree when they are disturbed or frightened: yet their flesh is considered so savoury by the negroes that they are unwilling to sell those which they catch, and would not exchange it for any other food, except perhaps for the 'ourite,' which is the Catfish hung up in the sun until it acquires a most fœtid smell tainting the atmosphere to a great distance; in this state it is a chief ingredient in their favourite ragout. This mode of living may be one of the causes of the peculiar odour of the skin of the woolly-headed race, which no ablutions can remove, and which is not less distinctive of their race than the colour of the skin itself."

Mr. Telfair then refers to the collection of *Fishes* last presented by him to the Society, portions of which have been exhibited at the Meetings of the Committee on the 12th and 26th of April. He is continuing his ichthyological collections, and states the proceeding which he adopts in the preservation of the specimens to be as follows. "The moment the fish is caught it is thrown into a tub of rum; and the numbers are gradually augmented until there is no further room and the spirit begins to acquire a slight smell of the fish. They are then taken out; washed in fresh rum; and again put into clean spirit. They are then ticketed and numbered with lead and wire, and are ready to be put up in the preparation bottles as opportunities for their embarkation offer: this is done with fresh spirit also." The success of this method was shown to be in many instances almost complete, the fishes exhibiting great beauty and brilliancy of colour. In some cases, however, it is less successful, and even the same species varies considerably in its state of preservation. Thus of the *Julis decussatus*, (*Sparus decussatus*, J.W. Benn.) two specimens almost equal the brilliancy depicted in the 'Fishes of Ceylon' [Plate xiv.], while a third has parted with nearly the whole of its colouring, and retains merely the markings. The iron wire employed in affixing the leaden numbers has generally rusted so as to stain the fishes where it has been in contact with them, and has in some instances been so weakened by corrosion as no longer to retain the lead.

Mr. Telfair concludes by referring to the neighbouring island of Madagascar, and to the interest attaching to its natural productions so far as they have been already investigated. He remarks how imperfect this investigation yet is, and gives a historical sketch of the various attempts made by European naturalists during the last twenty years, but few of which have been attended with even moderate success. In several instances they have been fatal to the zealous individuals who have devoted themselves to the pursuit, the climate, especially that of the coast, being generally ill suited to Europeans. A new attempt is about to be made under the auspices of Mr. Telfair and the Mauritius Natural History Society, from which he anticipates considerable additions to science, the individual selected being well adapted for the purpose by long practice in collecting and preserving specimens, and by being thoroughly acclimated to Madagascar, in which he has on several occasions resided for a considerable time.

Mr. Owen, having had occasion to examine recently with Mr. Yarrell the body of a *Gannet*, (*Sula Bassana*,) which died at the Society's Garden, read his notes of the examination. They referred chiefly to the situation and connections of the air-cells, and differed in some particulars from the observations recorded by Montagu, who states in the 'Supplement to the Ornithological Dictionary' [article *Gannet*], that "by reason of some valvular contrivance the skin could not be artificially inflated through the lungs;" and adds, "it is also clear that there is no direct communication between the sides."

"In the examination our attention was chiefly directed to the air-cells, which in this bird, as in the *Pelican*, have a most extensive distribution. We commenced by gentle but continued inflation through the *trachea*, a pipe having been introduced into the upper *larynx:* in a short time the integuments of the whole of the lateral and inferior parts of the body rose, and the air-cells seemed completely filled, especially that which is situated in front of the *os furciforme*. Being thus satisfied that they all had a free communication with the chest, we next proceeded to see at what points these communications took place, and in what degree the air-cells communicated with each other. For that purpose the air-cells on the left side of the body were laid open, and shortly after those of the opposite side collapsed, indicating the existence of apertures of communication, although the *septum* which ran along the middle line of the body appeared at first sight imperforate. There was a free communication between the lateral air-cells of the same side of the body from the *os furciforme* to the side of the *pelvis;* but the air-cell in front of the *os furciforme* remained still tensely inflated. The lateral air-cells had a free communication with the cavity of the chest at the *axilla*, at which part the air had entered these cells during the inflation. The pectoral muscles and those of the thigh presented a singular appearance, being as it were, cleanly dissected, having the air-cells extended above and below them; the axillary vessels and nerves also passing bare and unsupported by any surrounding substance through these cavities. We traced the air-cells down the side of the *humerus*, *ulna*, and metacarpal bone, into all of which the air entered, and even into the bone corresponding to the first *phalanx*, which agrees with what Mr. Hunter has described in the *Pelican*. (Animal Œcon. p. 92.)

"As none of these proceedings had any effect on the air-cell in front of the *os furciforme*, which still continued distended, it was evident that inflation by the *humerus* could not have filled it except through the medium of the lungs themselves. We next proceeded to detach the integument from this air-cell to see its shape and extent; this required to be done with great care, as it adhered pretty closely to the skin and roots of the feathers: it was of a globular form, about four inches in diameter, and communicated with the *thorax* at its anterior aperture below the *trachea*.

"Numerous strips of muscular fibres passed from various parts of the surface of the body, and were firmly attached to the skin; a beautiful fan-shaped muscle was also spread over the external surface of the air-cell anterior to the *os furciforme*. The use of these muscles appeared to be, to produce instantaneous expulsion of the air from these external cells, and by thus increasing the specific gravity of the bird to enable it to descend with the rapidity necessary to the capture of a living prey while swimming near the surface of the water.

"With respect to the general anatomy of this bird, it may be observed that we found the two small glands at the termination of the *trachea*, which are noticed by Montagu, and which exist in addition to the ordinary pair lying above the *bronchiæ*. The stomach corresponded exactly with the figure given by Sir Everard Home (Comp. Anat. pl. xlvi.), the pyloric orifice being provided with the bilobed valve which is there represented, though not described in the text; it evidently opposes a too ready egress of the contents of the stomach."

Mr. Vigors exhibited a collection of African Birds which had been presented to the Society by Henry Ellis, Esq., of Portland Place. They consisted of about one hundred and thirty species, many of them of extreme rarity and value, and a great portion unknown to the cabinets of England. They came immediately from Algoa Bay; but were supposed to have been collected far in the interior of the country. Mr. Vigors expressed his intention of laying before the Committee at an early Meeting, a descriptive catalogue of the whole collection, as well as whatever particulars he could collect respecting the locality from which it was brought. He named and characterized in the mean time the following apparent novelties from the *Insessorial Birds.*

TURDUS GUTTATUS. *Turd. supernè olivascenti-brunneus, subtùs subrufescenti-albidus; strigis tribus genarum, guttis rotundis pectoris abdominisque, tectricumque alarum notis brunnescenti-atris; tectricibus alarum, rectricibusque tribus utrinque lateralibus ad apicem albo notatis.*

Statura paulo minor quàm *Turdi iliaci*, Linn.

PYRRHULA ALBIFRONS. *Pyrr. nigra, capite nuchâque ferrugineo nitore subtinctis; fronte maculâque remigum albis.*

Longitudo *corporis*, $7\frac{3}{4}$; *alæ*, 4; *caudæ*, 3; *tarsi*, $\frac{3}{4}$; *rostri*, $\frac{3}{4}$, altitudo $\frac{3}{4}$.

PLOCEUS GUTTURALIS. *Ploc. suprà pallidè olivaceo-brunneus; capite colloque in fronte aurantiacis, corpore subtus aurantiaco-flavo; gulâ juguloque nigris, rostro attenuatiore.*

Longitudo *corporis*, $6\frac{1}{2}$.

PLOCEUS SPILONOTUS. *Ploc. capite suprà corporeque subtùs aurantiaco-flavis; gulâ, jugulo, dorsoque summo nigris, hoc flavo maculato; uropygio fusco-lutescente; alis caudâque fuscis.*

Statura præcedentis; rostro fortiore.

PLOCEUS CHRYSOGASTER. *Ploc. capite genis corporeque toto suprà saturatè castaneo-brunneis; gulâ flavo et brunneo variegatâ; corpore subtùs aureo-flavo.*

Statura præcedentium; at rostrum multò validius.

LAMPROMORPHA[*] CHALCOPEPLA. Mas. *Lamp. suprà splendidè viridis, cupreo nitens; subtùs alba, lateribus viridi-cupreo fasciatis; strigâ in capitis medio, secundâ superciliari, alterâque maxillari, maculis tectricum alarum, remigum, rectricumque, duabus mediis exceptis, albis.*

Fœm. aut mas jun.? *Lamp. corpore suprà metallicè viridi; capite,*

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[*] A group including the shining *Cuckoos* of Africa, India, and New Holland, indicated in the *Transactions of the Linnean Society*, vol. xv. p 300. Mr. Vigors expressed his belief of having lately seen a name attached to this group by some modern author; but he could not call to his recollection the work in which it occurred.

nuchâ, regioneque interscapulari cupreo splendentibus; collo in fronte pectoreque rufescenti; abdomine albo, lateribus viridi-æneo fasciatis; caudâ ferrugineâ, viridi-æneo fasciatâ; rectricum trium utrinque lateralium pogoniis, omniumque apicibus albo notatis.

Statura *Cuculi aurati*, Gmel.

† CORYTHAIX PORPHYREOLOPHA. *Cor. collo, abdomine medio, pectore, regioneque scapulari gramineo-viridibus, his subrufescentibus; fronte strigâque per oculos splendidè viridibus; capite cristato, alis, caudâque splendenti-purpureis; remigum fasciâ latâ subpurpurascenti-coccineis; dorso abdomineque imis, tectricibusque femorum fusco atris; rostro pedibusque atris.*

Statura *Cor. Persæ*, Ill.

BUCCO NANUS. *Bucco suprà niger, sulphureo striatus; strigâ superciliari gracili, alterâque per totam longitudinem alarum extendente latâ, aurantiis; gulâ crissoque sulphureis, abdomine fuscescenti; fronte coccineo.*

Longitudo *corporis*, $4\frac{1}{4}$; *rostri* ad frontem, $\frac{7}{16}$, ad rictum $\frac{9}{16}$.

YUNX PECTORALIS. *Y. suprà pallidè brunnescenti-griseus, fusco graciliter undulatus; nuchâ scapularibusque nigro notatis, caudâ nigro fasciatâ; subtùs albidus, collo in fronte confertim, femorum tectricibus minùs confertim, nigro fasciatis, abdomine nigro lineato; maculâ grandi pectorali ad gulam extendente rufâ; remigibus fuscis, pogoniis externis ferrugineo fasciatis.*

Statura *Y. Torquillæ*, Linn.

June 28, 1831.

Rev. W. Kirby in the Chair.

A letter from Sir Robert Ker Porter, Corr. Memb. Z. S., dated City of Caracas, Venezuela, March 25, 1831, was read. It announced his having recently obtained possession of a specimen of the *American Tapir*, (*Tapir Americanus*, Gmel.), which it was his intention to transmit to the Society at the earliest opportunity. It embraced a full description of the animal; and entered at considerable length into an account of its habits. The letter was accompanied by two drawings of the *Tapir*, and by sketches of its proboscis-like upper lip.

Mr. Gray exhibited the skins and skulls of two *Mammalia* brought from China by Mr. Reeves, together with the skull of a third, of which a skin was also in his possession. On these he proposed to found three new genera, the characters of which may be given as follows:

HELICTIS.

Dentes primores $\frac{6}{6}$: *laniarii* $\frac{1}{1}\,\frac{1}{1}$: *molares* $\frac{5}{6}\,\frac{5}{6}$; *e quibus* $\frac{3}{4}\,\frac{3}{4}$ *anteriores falsi conici compressi; carnivori* $\frac{1}{1}\,\frac{1}{1}$, *in maxillâ superiori 3-lobati, cum processu interno subcentrali lato 2-acuminato; tuberculares* $\frac{1}{1}\,\frac{1}{1}$, *superiores mediocres transversi, inferiores exigui. Caput elongatum. Pedes breves; plantæ ad calcaneum ferè nudæ; digiti 5—5; ungues validæ, anteriores longæ compressæ. Cauda cylindrica mediocris.*

This genus, which inhabits eastern Asia, has the general appearance and colouring of *Mydaüs*, combined with a dentition resembling that of *Gulo* or *Mustela*, but differing from both the latter genera in the large internal central lobe of the upper carnivorous tooth. The species exhibited may be characterized in the following terms.

HELICTIS MOSCHATA. *Hel. suprà argentata, pilis singulis basi cinereis apice argenteo-albis, colore argenteo ad latera corporis et versus apicem caudæ dominante, capite pedibusque anticis in fusco-cinerascentem vergentibus; strigâ inter, aliisque duabus pone, oculos, maculâ interauriculari nuchalique, labio superiore, mento, gulâ, gastræo medio, femoribusque internis, albis.*

The entire length of the animal is 23½ inches, of which the tail measures 8. It inhabits China, and smells strongly of musk.

Mr. Gray added that the *Gulo orientalis* of Dr. Horsfield's 'Zoological Researches in Java' appeared to him to form a second species of the genus, closely resembling the Chinese in its general characters, and in the disposition of its colouring, but differing in its browner colour and in the larger proportion of white upon the head and back. The internal lobe of the upper carnivorous tooth in the Javanese animal is also described as being anterior and very minute.

PAGUMA.

Dentes primores $\frac{6}{6}$ *æquales : laniarii* $\frac{1}{1}$ $\frac{1}{1}$ *: molares* $\frac{6}{6}$ $\frac{6}{6}$ *; quorum utrinque in maxillâ superiori 3 falsi parvi compressi, 1 carnivorus brevis obtusè 3-lobus cum processu interno centrali, 2 tuberculares subquadrati internè subangustati anticè non producti ; in maxillâ inferiore 4 falsi, 1 carnivorus, 1 tubercularis. Pedes postici plantigradi, ad calcaneum usque nudi callosi. Cauda longa attenuata.*

In the number and disposition of its teeth this genus agrees with *Viverra*, from which, however, it differs in their conformation. It is much like *Ictides* in colouring, but has about the face the pale marking of *Paradoxurus :* the skin has the odour of civet. From the genus *Viverra* it is distinguished by the shape of its skull, the cerebral cavity being in it much larger, the space between the eyes broader, and the nose much broader and shorter. The species was characterized in the following terms :

PAGUMA LARVATA. *Pag. grisea ; fasciâ albâ frontali transversâ, alterâque longitudinali per frontem ad nasum ductâ ; caudâ apice nigrescenti.*

Gulo larvatus. *Ham. Smith in Griff. Transl. Cuv. Règn. An.* ii. p. 281, c. fig.

Viverra larvata. *Gray, Spic. Zool.* p. 9.

The third genus described was founded on a *glirine* quadruped, nearly allied to the Bamboo-Rat (*Mus Sumatrensis*, Raffl.?), with which Mr. Gray associated it under the following characters.

RHIZOMYS.

Dentes primores $\frac{2}{2}$ *maximi, elongati, triangulares, acutati : molares* $\frac{3}{3}$ $\frac{3}{3}$ *radicati, subcylindrici, coronis transversim subparallelim porcatis ; superiores internè lobati. Caput magnum. Oculi parvi aperti. Auriculæ nudæ conspicuæ. Corpus crassum subcylindricum. Pedes breves validi, digitis 5—5. Cauda mediocris, crassa, nuda.*

In teeth and general appearance this genus is most nearly allied to *Spalax*, from which it differs in its tail of moderate length, its exposed eyes and ears, and the more complex character of its molar teeth. The species of *Rhizomys* live moreover upon, and not under, the ground, being found about Bamboo-hedges, on the roots of which they principally subsist. The following were stated to be the distinctive characters of the two species known.

RHIZOMYS SINENSIS. *Rhiz. pallidè cinerascens unicolor.*

Hab. in Chinâ. *D. Reeves.*

RHIZOMYS SUMATRENSIS. *Pallidè fuscus, pilis raris albidis interspersis ; corporis lateribus pedibusque saturatioribus ; genis pallidioribus, occipite nigrescenti lineâ longitudinali albâ, pectore albido.*

Mus Sumatrensis, *Raffles, Linn. Trans.* xiii. 258? *Temminck, Mus. Leyd.*
Spalax Javanus, *Cuv. Règne Anim.*, ed. 2., i. 211.
Hab. in Sumatrâ, *Raffles? Temminck;* Javâ, *Cuvier.*

The latter species seems to have been first observed by Colonel Farquhar, in whose collection of drawings, preserved in the Museum of the Asiatic Society, a representation of it is found. Of the former we owe the discovery to Mr. Reeves.

Mr. Vigors exhibited, on the part of Captain Cook, specimens of several *Birds* recently presented by that gentleman to the Society, and also of some other *Birds* shot by him in the South of Europe, some of which were interesting on account of their rarity, and others with reference to the localities in which they were obtained. Among them was a specimen of the *Pica cyanea,* (*Corvus cyaneus,* Pall.), a species not included by M. Temminck in the 'Oiseaux d'Europe', which had been killed by Captain Cook in Spain. There were also specimens of the *Falco tinnunculoides;* of the *Sturnus unicolor,* Marm., killed in Spain; of the *Lanius meridionalis,* Temm., a species referable to the genus *Collurio* as recently distinguished by Mr. Vigors: of the *Sylvia conspicillata,* Marm., killed in Spain: of the *Saxicolæ cachinnans* and *stapazina,* Temm., also killed in Spain: and of the *Fringilla domestica,* Linn., which is met with in great numbers in Spain, and consequently extends far beyond the southern limits assigned to the species by M. Temminck.

A collection of Birds presented to the Society by H. H. Lindsay, Esq. of Canton, were laid upon the table. They were accompanied by a letter from that gentleman to the Secretary, of the date of Jan. 25, 1831, stating that the collection had been formed during the summer of the previous year in the neighbourhood of Manilla, and adding some notes respecting the various species, as well as the names in the Tagallo or native language of the country. The collection consisted of about fifty-six species, fifty of which at least had not previously been in the Society's Museum, or in any other public collection in England.—Mr. Vigors pointed out the different species; and announced that a catalogue of them was in preparation, which would shortly be submitted to the Committee. In the mean time he characterized the following species.

HIERAX ERYTHROGENYS. *Hier. capite et corpore suprà, caudâ femoribusque intensè atris; gulâ, collo in fronte, corporeque subtùs albis; strigâ a rictu ad aures extendente rufâ; rostro albo, pedibus nigris.*

Statura *Hier. cærulescentis.*

BUTEO HOLOSPILUS. *But. supernè brunneus, subtùs brunnescenti-rufus; capite, fasciisque duabus remigum rectricumque fusco-atris; nuchâ et dorso, collo in fronte, pectore abdomineque toto, tectricibusque alarum maculis albis ocellatis, harum maculis diminutioribus.*

Staturâ tertiâ parte minor quàm *Buteo Bacha;* ei speciei simillima, differt tamen capite lævi, corporeque toto maculato.

CAPRIMULGUS MACROTIS. *Cap. intensè brunneus, rufo undulatus, corpore subtùs caudâque rufo fasciatis; capite aurito scapularibusque rufo-brunneis, fusco undulatim punctulatis nigroque notatis; torque jugulari albo ad nucham extendente rufo.*

Longitudo *corporis*, 15; *rostri* ad frontem $\frac{3}{8}$, ad rictum, $1\frac{1}{4}$; *alæ* a carpo ad apicem remigis 2dæ, $10\frac{1}{4}$; *caudæ*, 7; *tarsi*, $\frac{1}{2}$.

DACELO LINDSAYI. *Dac. corpore suprà brunneo, olivaceo et viridi nitente, guttis rufo-albidis notato, pectore abdomine crissoque albis, illorum plumis, medii abdominis exceptis, olivascenti-viridi marginatis; capitis pileo saturatè olivascenti-viridi, vittá superciliari lazulinâ circumdato, deinde vittâ per oculos nigrâ, alterâque suboculari ferrugineâ marginato; gulâ juguloque ferrugineis; strigâ utrinque maxillari lazulinâ; remigibus fuscis; rectricibus omnibus ad apicem, duabus utrinque externis ad latera, ferrugineo notatis; rostro subbrevi.*

Longitudo *corporis*, $10\frac{1}{2}$; *rostri*, $1\frac{3}{8}$; *alæ* a carpo ad apicem remigis 3tiæ, $4\frac{1}{8}$; *caudæ*, $4\frac{1}{2}$, *tarsi*, $\frac{1}{2}$.

DACELO LESSONII. *Dac. corpore suprà brunneo, olivaceo et viridi nitente, albido guttato; capitis pileo saturatè olivaceo-viridi, vittâ superciliari cæruleo-viridi circumdato, deinde vittâ alterâ nigrâ marginato; collo in fronte corporeque subtùs albo, pectoris abdominisque plumis viridi-brunneo marginatis; strigâ utrinque maxillari viridi; remigibus fuscis; rectricibus omnibus ad apicem, tribus utrinque externis ad latera, ferrugineo notatis; rostro sublongo.*

Longitudo *corporis*, $11\frac{3}{4}$; *rostri* $1\frac{7}{8}$; *alæ* a carpo ad apicem remigis 3tiæ, $4\frac{1}{4}$; *caudæ*, $4\frac{3}{4}$; *tarsi*, $\frac{5}{8}$.

MUSCICAPA OCCIPITALIS. *Musc. corpore suprà pallidè lazulino, capite colloque splendidioribus; abdomine lazulino-albido; maculâ occipitali grandi, torqueque gracili jugulari, sericeo-atris.*

Longitudo *corporis*, $6\frac{1}{2}$.

RHIPIDURA NIGRITORQUIS. *Rhip. cinereo-grisea; corpore subtùs, rectricumque, duabus mediis exceptis, apicibus albis; fronte, torqueque jugulari nigris; remigibus rectricibusque fuscis.*

Longitudo *corporis*, 7.

IRENA CYANOGASTRA. *Ir. nigrescenti-cyanea; capite suprà, fasciâ tectricum alarum, uropygio, crissoque splendenti-cyaneis; collo in fronte, genis remigibusque atris.*

Staturâ *Irenæ Puellæ*, et simillima; differt abdomine caudâque cyaneis, haud nigris, dorso cyaneo haud lazulino, et rostri culmine plus elevato.

ORIOLUS ACRORHYNCHUS. *Or. aureo-flavus; vittâ a rictu per oculos extendente sinciputque obtegente latâ, remigibus totis, rectricumque basibus nigris; rostro flavo, culmine elevato.*

Longitudo *corporis*, 12; *alæ* a carpo ad apicem remigis 4tæ, 6; *caudæ*, $4\frac{1}{2}$; *tarsi*, 1; *rostri*, $1\frac{2}{5}$.

PSITTACULA RUBIFRONS. *Psitt. viridis, subtùs pallidior; fronte, dorso imo, rectricumque tectricibus coccineis; remigibus caudâque viridi-fuscis, rostro subelongato rufo.*

Statura paullò major quàm *Psitt. Galguli.*

Picus spilolophus. *Pic. dorso alisque sanguineo-coccineis; subtùs sordidè albus, fuscescenti undulatus; capite colloque nigris, guttis albis maculatis; hujus maculis grandioribus; remigibus caudâque fuscis, harum pogoniis internis albo maculatis.*

Longitudo *corporis*, $11\frac{3}{4}$.

Picus modestus. *Pic. suprà ater, alis ad latera apicesque subrufescentibus; capite in fronte genisque obscurè coccineis, occipite, gulâ, jugulo, colloque grisescenti-atris, plumis maculâ minutissimâ albâ ad apicem terminatis; rectricibus duabus mediis elongatis.*

Longitudo *corporis*, 15; *alæ* a carpo ad apicem remigis 4tæ, 6; *caudæ*, 6; *tarsi*, 1; *rostri*, $1\frac{1}{2}$.

Lampromorpha amethystina. *Lamp. suprà splendidè amethystina; abdomine albo, fasciis viridi-amethystinis ornato; rectricibus lateralibus albo notatis.*

Longitudo $7\frac{1}{4}$.

This description is taken from a bird in the state of change, the amethystine feathers on the back, tail and breast, appearing partially through a ferruginous ground, but sufficiently numerous and defined to indicate the adult plumage. A younger bird in the collection has nearly the whole of the upper body ferruginous with an amethystine feather here and there breaking out. In a note appended to the description of the species, Mr. Lindsay states that the natives considered them of extremely rare occurrence.

Nycticorax Manillensis. *Nyct. suprà castaneo-rufa; collo in fronte, abdominis lateribus, femorum tectricibus, alarumque tectricibus inferioribus pallidiori-rufis; capite colloque suprà nigris, cristæ pennis longis pendentibus albis, apice nigro; pectore abdomine crissoque albis.*

Staturâ paulo major quàm *Nyct. Caledonica*, cui simillima; differt tamen colore cristæ, colli in fronte, tectricumque inferiorum alarum.

July 12, 1831.

W. Yarrell, Esq. in the Chair.

Skins of numerous species of *Mammalia* obtained in Dukhun, (Deccan), East Indies, were exhibited by Major W. H. Sykes, Corr. Memb. Z. S. They were accompanied by a Catalogue of the *Mammalia* noticed by Major Sykes in Dukhun, which included also observations on the habits of each species, with occasional remarks on their rarity or abundance, on their geographical range, and on other interesting points connected with their history.

The following species were enumerated:—

Semnopithecus Entellus, F. Cuv. *Makur* of the Mahrattas.—Is found in large troops in the woods of the Western Ghauts; and is not venerated by the Mahratta people, nor do they object to its being killed.

Macacus radiatus, Geoff. *Waanur* of the Mahrattas.—Inhabits the woods of the Western Ghauts in small troops.

Pteropus medius, Temm. *Wurbagool* of the Mahrattas.—Is very numerous in Western India, and such variations are found in the colouring of different individuals in the same troop, that two or three species might be supposed to be included in it. Some individuals have a greater length of body (14½ inches) than is given to the *Pter. Javanicus* of Dr. Horsfield.

Nyctinomus plicatus, Geoff. (*Vespertilio plicatus*, Hamilton?)— This *Bat* bears a very close resemblance to Dr. Horsfield's *Nyct. tenuis.*

RHINOLOPHUS DUKHUNENSIS, Sykes.—*Rhin. suprà murinus, infrà albido-brunneus: auribus capite longioribus: antibrachio corpus longitudine æquante.*

This *Bat* belongs to the same section as Dr. Horsfield's *Rhin. insignis*, but differs from that species in being much smaller; in having the ears larger and more rounded; the nose-leaf with the upper lobe concave, ridged beneath and revolute above; and the front lobe oblong and notched in the centre. It differs from the *Rhin. crumeniferus*, Pér. and Le Sueur, (which is the *Rhin. marsupialis* of M. Geoffroy's lectures, and the *Rhin. Speoris* of M. Desmarest,) in being much smaller, this species having the fore arm nearly half as long again as the Dukhun bat. The upper nose-leaf also is much more produced, and finally the colour of the fur in this species is reddish. The fore arm of the *Rhin. Speoris* as figured is 2 inches 2 lines long, and the body and head 2 inches 2 lines. In the Dukhun species the fore arm is only the length of the body. Expansion of its wings 10 inches.

Sorex Indicus, Geoff. *Cheechoondur* of the Mahrattas.—These troublesome and disagreeable animals are very numerous in Dukhun, but much more so in Bombay. The sebaceous glands in an old male were observed to be very large, and the odour of musk from them almost insupportable; while in an adult female the glands were scarcely discoverable, and the scent of musk very faint. The *Sorex Indicus* and *Sor. giganteus* are regarded by Major Sykes as specifically identical, he having killed them in the same room, and seen them frequently together.

Ursus labiatus, Blainv. *Aswail* of the Mahrattas.—In the skulls of many individuals of this species which he has examined, Major Sykes has never seen more than four incisor teeth in the upper and six in the lower jaw; the two centre teeth standing a little in front of the line of the rest. One individual, now in his possession, is so young that he does not conceive that the deficient incisors can have fallen out; nor is there any appearance of dentition having existed in the places which they should have occupied. He remarks that it might be deemed advisable therefore to remove this animal from the genus *Ursus.*

Lutra Nair, F. Cuv. *Juhl Marjur* or *Water Cat* of the Mahrattas.—The *Otter* of Dukhun differs only from the *Nair* in wanting the white spots over the eyes, in having a white upper lip, and in being somewhat larger.

CANIS DUKHUNENSIS, Sykes.—*Kolsun* of the Mahrattas.

Can. rufus, subtùs pallidior: caudâ comosâ pendente: pupillâ rotundatâ.

This is the *wild Dog* of Dukhun. Its head is compressed and elongated; its nose, not very sharp. The eyes are oblique: the pupils round, *irides* light brown. The expression of the countenance that of a coarse ill-natured *Persian Greyhound,* without any resemblance to the *Jackal,* the *Fox,* or the *Wolf,* and in consequence essentially distinct from the *Canis Quao* or *Sumatrensis* of General Hardwicke. Ears long, erect, somewhat rounded at the top, without any replication of the *tragus.* Limbs remarkably large and strong in relation to the bulk of the animal; its size being intermediate between the *Wolf* and *Jackal.* Neck long. Body elongated. Between the eyes and nose, red brown: end of the tail blackish.

From the tip of the nose to the insertion of the tail 33 inches in length: tail 8½ inches. Height of the shoulders 16½ inches.

None of the *domesticated Dogs* of Dukhun are common to Europe.

The first in strength and size is the *Brinjaree Dog,* somewhat resembling the *Persian Greyhound* in possession of the Society, but much more powerful.

The *Pariah Dog* is referable to M. Cuvier's second section. They are very numerous, are not individual property, and breed in the towns and villages unmolested.

Amongst the Pariahs is frequently found the *Turnspit Dog,* long backed, with short crooked legs.

There is also a petted minute variety of the *Pariah Dog,* usually of a white colour and with long silky hair, corresponding to a common *Lap-Dog* of Europe; this is taught to carry flambeaux and lanterns.

The last variety noticed is the *Dog* with hair so short as to appear naked like the *Canis Ægyptius.* It is known to Europeans by the name of the *Polygar Dog.*

CANIS PALLIPES, Sykes.—*Landgah* of the Mahrattas.

Can. sordidè rufescenti-albidus; dorso nigrescenti ferrugineoque vario; pedibus totis pallidè ferrugineis: caudâ sublongâ pendente.

This is the *Wolf* of Dukhun. Its head is elongated, and its muzzle acuminated: a groove exists between the nostrils. Eyes oblique: *irides* yellowish bright brown. Ears narrow, ovate, erect; small for the length of the head. Tail pendent, thin but bushy, extending below the *os calcis.* General colour of the fur a dirty reddish white or whited brown. Along the back and tail very many of the hairs are tipped black, mixed with others tipped ferruginous. The tail ends in a black tip. The inner surface of the limbs, the throat, breast and belly, dirty white. Legs pale. From the ears to the eyes reddish grey, with a great number of short black hairs intermixed; from the eyes to the nostrils, light ferruginous. The fur from the *occiput* to the insertion of the tail is two or three inches long, gradually shortening as it approaches the sides; hence all over the body very short and lying close.

The description is taken from two three-parts grown animals.

Length from tip of nose to insertion of tail 35 to 37 inches; of the tail 11 to 12 inches; the hair extending two inches beyond the measurement.

These animals are numerous in the open stony plains of Dukhun; but are not met with in the woods of the Ghauts.

Canis aureus, Linn. *Kholah* of the Mahrattas.—*Jackals* are numerous in Dukhun. Major Sykes had in his possession at the same time a very large wild male and a domesticated female. The odour of the wild animal was almost unbearable. That of the domesticated *Jackal* was scarcely perceptible.

CANIS KOKREE, Sykes.—*Kokree* of the Mahrattas.

Can. suprà rufescenti-griseus, infrà sordidè albus; caudæ comosæ apice nigro; pedibus rufescentibus: pupillâ elongatâ.

The *Fox* of Dukhun appears to be new to science, although it much resembles the descriptions of the *Corsac.* It is a very pretty animal, but much smaller than the *European Fox.* Head short; muzzle very sharp. Eyes oblique: *irides* nut brown. Legs very slender. Tail trailing on the ground; very bushy. Along the back and on the forehead fawn colour with hair having a white ring near to its tip. Back, neck, between the eyes, along the sides and half way down the tail reddish grey, each hair being banded black and reddish white. All the legs reddish outside, reddish white inside. Chin and throat dirty white. Along the belly reddish white. Ears externally dark brown, and with the fur so short as to be scarcely discoverable. Edges of eyelids black. Muzzle red brown.

Length 22 and 22½ inches: of the tail 11½ to 12 inches.

Viverra Indica, Geoff., (*Viv. Rasse,* Horsf.) *Juwadee Manjur,* or *Civet Cat* of the Mahrattas.—There are two varieties of this species of *Viverra* in Dukhun; one inhabiting the woods along the Ghauts; the other the country eastward of the Ghauts. The former has the ground colour much grayer, and the lines more distinctly broken into spots. The other variety has a ferruginous tint, and the four black longitudinal lines or stripes on the sides of the neck are more marked: it attains the length of 28½ inches.

Herpestes griseus, Desm. *Moongus* of the Mahrattas.—Some specimens of this animal measure from 19¾ to 20½ inches from the tip of the nose to the insertion of the tail, and the tail 15 to 16½ inches.

Paradoxurus Typus, F. Cuv. *Ood* of the Mahrattas.—This animal is by no means rare in Dukhun. Its carnivorous propensities are very strong, but it may be fed entirely on rice and clarified butter. In the stomachs of some individuals examined at Poona, were found fruit, vegetables, and *Blattæ*.

Hyæna vulgaris, Cuv. *Turrus* of the Mahrattas.—*Hyænas* are numerous in Dukhun, and are susceptible of the same domestication as a dog.

Felis Tigris, L. *Puttite Wagh* or *striped Tiger* of the Mahrattas.—Royal tigers are so numerous in the province of Khandesh, that 1032 were killed from the years 1825 to 1829 inclusive, according to the official returns. They are much less numerous in the collectorates of Poonah, Ahmednuggar, and Dharwar.

Fel. Leopardus. *Cheeta* of the Mahrattas.—This is regarded by Major Sykes as the *Leopard* of M. Temminck's monograph of the genus *Felis*. It is a taller, longer, and slighter built animal than the succeeding, which he considers as the *Panther*. It differs also in more of the ground colour being seen, in the rose spots being much less curved, and in other particulars. The natives of Dukhun consider the *Cheeta* and succeeding Cat as distinct animals. The *Cheeta* is extremely rare. On the contrary, the

Fel. Pardus, *Beebeea Baugh* of the Mahrattas, is so abundant that 472 were killed from 1825 to 1829 inclusive, in the four collectorates of Dukhun. It exactly resembles the animal figured as the *Panther of the ancients* in Mr. Griffiths's Translation of the 'Règne Animal.' It differs from the preceding in its smaller size, stouter make, darker ground colour, and in its crowded rose rings.

Fel. jubata, L., and *Fel. venatica*, H. Smith. *Cheeta* of the Mahrattas.—These animals appear to be identical, the specific differences deduced from the hair originating in domestication. A skin of the wild animal has a rough coat, in which the mane is marked, while domesticated animals from the same part of the country are destitute of mane and have a smooth coat.

Fel. Chaus, Guld. *Mota Rahn Manjur* or *larger wild Cat* of the Mahrattas.

Fel. torquatus, F. Cuv. *Lhan Rahn Manjur* or *lesser wild Cat* of the Mahrattas.—The specimens from Dukhun differ only from the *Fel. torquatus* figured in the third volume of the 'Histoire Naturelle des Mammifères' in the ears externally being tipped dark brown, and in having two narrow stripes behind the eyes instead of one. The sexes resemble each other in colour, marks and size.

Mus giganteus, Hardw. *Ghoos* of the Mahrattas. — In fully grown individuals of the well-known *Bandikoot Rat*, none of the teeth are tuberculous. Its body attains a length of $16\frac{7}{10}$ inches; the tail $11\frac{5}{10}$ inches.

Mus decumanus, Pall. *Chooa* of the Mahrattas.—The *Norway* or *brown Rat* abounds in Dukhun.

Mus Musculus, L.—The *Mouse* is comparatively rare in Dukhun.

Another *Mouse* was observed by Major Sykes, which he believes to be new. It is bright light chestnut above, reddish white below. Tail much longer than the body: size of the common mouse. Found only in fields and gardens.

SCIURUS ELPHINSTONII, Sykes.—*Shekroo* of the Mahrattas.

Sc. suprà nitidè castaneus, infrà rufescenti-albidus; caudæ dimidio apicali pallidè rufescente.

This very beautiful animal is found only in the lofty and dense woods of the Western Ghauts. It is of the size of the *Sc. maximus*, and the general arrangement of its colours is the same; but its colours are invariable, and do not present those differences which exist in the *Sc. maximus*.

Ears and whole upper surface of the body, half way down the tail, outside of the hind legs and half way down the fore legs outside, of a uniform, rich reddish chestnut. The whole under surface of the body, from the chin to the vent, inside of limbs and lower part of fore legs, crown of the head, cheeks and lower half of tail, of a fine reddish white, the two colours being separated by a defined line and not merging into each other. Feet of a light red. Forehead and down to the nose reddish brown, with white hairs intermixed. *Irides* nut brown. Ears tufted. Length from the tip of the nose to the insertion of the tail 20 inches; of the tail $15\frac{1}{4}$ inches.

Dedicated to a very distinguished person and a zealous promoter of scientific research, the Hon. Mountstuart Elphinstone.

Sc. Palmarum, Briss. *Khurree* of the Mahrattas.—The *Palm Squirrel* is very abundant in gardens in Dukhun.

HYSTRIX LEUCURUS, Sykes.—*Sayal* of the Mahrattas.

Hyst. caudâ albâ.

This animal appears to be distinct from the European species, which it closely resembles in form and covering. It is nearly a third larger. All the spines and open tubes of the tail are entirely white, which is not the case in the *Hyst. cristata*. The spines of the crest also are so long as to reach to the insertion of the tail. The ears are much less rounded, and the nails are shorter, infinitely deeper and more compressed, and with deep channels below. The white gular band is more marked; and, finally, the Asiatic species is totally destitute of hair, spines where wanting being replaced by strong bristles even down to the nails.

Lepus nigricollis, F. Cuv. *Sussuh* of the Mahrattas.—This species of *Hare* is very common in the stony and bushy hills of Dukhun.

Manis pentadactylus, L. *Kuwlee Manjur* or *tiled Cat* of the Mahrattas.—Very common in Dukhun, living on white ants.

Sus Scrofa, L. *Dookur* of the Mahrattas.—*Wild Hogs* are numerous in Dukhun, and the males attain to a very great size. Every village also abounds with *Hogs*, but any property in them is equally abjured by individuals and the community. These *village Hogs* are of the same colour as the wild animal, mostly a rusty black, and the only variations are slate black or slate intense brown; but it is not above two-thirds of the size of the latter. Tail never curled or spirally twisted.

Equus Caballus, L. *Ghora* of the Mahrattas.—A fine breed of *Horses* exists on the banks of the Beema and Mahn rivers in Dukhun, supposed to have been improved by the Arabian blood. The variety called *Pony* by us, and *Tuttoo* by the Mahrattas, is sedulously propagated.

Equus Asinus, L. *Gudha* of the Mahrattas.—The *Ass* of Dukhun is very little larger than a good mastiff or Newfoundland dog. It is said to be found wild in Katteewar.

Camelus Dromedarius, L. *Oont* of the Mahrattas.—The *Dromedary* is rarely bred in Dukhun, but is in very general use. The two-humped *Camel* is not known.

Moschus Meminna, Erxl. *Peesoreh* of the Mahrattas.—This beautiful little animal is found in considerable numbers in the dense woods of the Western Ghauts, but never on the plains.

Cervus equinus, Cuv. *Sambur* of the Mahrattas.—Abounds in the Ghauts of Dukhun and in Khandesh, and is no doubt the same as the Malayan *Rusa* figured in Mr. Griffiths's Translation of the 'Règne Animal'. It wants the size of the *Cerv. Aristotelis* of Bengal, also called *Sambur* (not *Samboo*), and is not so dark in colour.

Cerv. Muntjak, Zimm. *Baiker* of the Mahrattas.—This beautiful species of *Deer* is a native of the Western Ghauts of Dukhun, and is never seen on the plains. It has large suborbital sinuses, which it uses in the manner of the *Ant. Cervicapra*.

Antilope Cervicapra, Pall. *Bahmunnee Hurn* of the Mahrattas.—This animal abounds on the plains of Dukhun, in flocks of scores, but is not met with in the Ghauts. The suborbital sinuses are capable of great dilatation, and the animal applies them to objects as if for the purpose of smelling.

ANT. BENNETTII, Sykes. *Ant. cornubus nigris, lyratis, apicibus lævibus leviter introrsum antrorsumque versis, ad basin ultra medium annulatis* (*annulis* 8–9); *rufescenti-brunneus, infrà albus, fasciâ laterali haud conspicuâ; fasciâ mediâ strigâque ab angulo oculi ad oris angulum extensâ nigris; caudâ nigrâ.*

Kalseepee or *Black Tail* of the Mahrattas. *Goat Antelope* of Europeans.

This *Antelope* is found on the rocky hills of Dukhun, rarely exceeding three or four in a group, and very frequently solitary. It belongs to the same section as the *Ant. Dorcas*. Horns erect, slightly diverging from each other, bending slightly backwards at first, subsequently with their points bending forward: ringed for ⅗ of their length. The whole upper surface and outside of the limbs rufous or red brown. Under surface and inside of the limbs white. Tail black. A black patch on the nose. A black narrow streak from the anterior corner of each eye towards the angle of the mouth. Suborbital sinuses very small; in dried skins not observable; nor does the animal dilate them unless very much alarmed. Limbs long and slender; black tufts at the knees. Body light. The female has horns, but they are slender, cylindrical, and without rings. The buttocks present a heart-shaped patch of white. Unlike the *Ant. Cervicapra* it carries its tail erect when in rapid motion. It stands as high as the *Bahmunnee Hurn*, but has less bulk.

There is another *Antelope* found in Dukhun, which Major Sykes has not yet identified, on account of the immature age of his specimen. It is brown above, whited brown below. Horns cylindrical, pointed, without rings. Its general appearance is that of the *Ant. rufescens* and *Ant. silvicultrix.*

Capra Hircus, Linn. *Bukee* of the Mahrattas.—The *goats* in Dukhun are gaunt, stand high on their legs, have the sides much compressed, and are covered with long shaggy hair, which in most is black. Ears nearly pendent. *Irides* ochrey yellow or reddish yellow. Tail always carried erect in movement.

Ovis Aries, Linn.—The variety of *Sheep* most extensively bred in Dukhun, has short legs, short thickish body, and arched chaffron. The wool is short, crisp and coarse, and is almost universally black. In most individuals there is a white streak or line from the anterior angle of each eye towards the mouth, and a white patch on the crown of the head.

Ant. picta, Pall. *Damalis risea*, H. Smith. *Rooee* of the Mahrattas. *Nylghaū* of the Persians.—This animal is an inhabitant of the Western Ghauts of Dukhun.

Bos Taurus, var. *Indicus.* (*Bos Indicus*, Linn.) *Pohl* and *Byl* of the Mahrattas.—This animal, remarkable for its hump, is when early trained to labour or to carriage nearly destitute of it. Dwarf cattle are not met with in Dukhun.

Bos Bubalus, Br. Male called *Tondgah;* Female, *Muhees* of the Mahrattas.—The *Buffaloe* of Dukhun is the long-horned variety, and is mostly bred in the Mawals or hilly tracts along the Ghauts.

Major Sykes subsequently called the attention of the Committee to a *Monkey* presented by him to the Society, and now living at the Gardens. It was obtained at Bombay, where it was believed to have been taken from Madagascar; and as it has some characters in common with the *Cercopitheci* (especially with the group of which the *Cerc. Sabæus* forms a part) and the *Semnopitheci* of India, it was remarked that it may ultimately prove to be a connecting link between the African and Asiatic monkeys. It wants the long limbs of the *Semnopitheci*; and although its tail is very long, it is not particularly thin. Major Sykes referred it provisionally to the *Semno-*

pitheci, until by an examination of its posterior molars its real station in the system should be determined.

It is thus characterized :

SEMN.? ALBOGULARIS, Sykes. *Semn.? suprà flavo nigroque, infrà albo nigroque irroratus ; gulâ albâ ; artubus nigris : mystacibus latis aures penè obvelantibus ; superciliorum pilis rigidis exstantibus.*

Hab. in Madagascar ?

Its canines are remarkably long (nearly ¾ of an inch), slender, sharp; the incisors very short and even. Head rounded and short. Ears very small, nearly rounded, and for the most part concealed in the long hair about the head. Eyes deeply seated, and shaded by a continuous arch of long hairs directed forwards. *Irides* broad; of a brown ochre colour. Hair forming a bunch on each cheek and resembling whiskers : no beard. Cheek pouches rudimentary only, not observable externally, even when filled, being concealed by the bushy hair of the cheeks. Thumbs of anterior hands short and distant ; those of the posterior long. Whole of the upper surface of the animal of a mingled black and yellowish ochre colour, each hair being banded black and ochre; the black prevailing on the shoulders, the ochre on the back and flanks. Under surface grizzled white and black. Anterior limbs uniform black ; posterior black with a little of the dorsal colour. Chin and throat pure white. Tail black, half as long again as the body.

The manners of this monkey are grave and sedate. Its disposition is gentle but not affectionate : free from that capricious petulance and mischievous irascibility characteristic of so many of the African species, but yet resenting irritating treatment, and evincing its resentment by very smart blows with its anterior hands. It never bit any person on board ship, but so seriously lacerated three monkeys, its fellow passengers, that two of them died from the wounds. It readily ate meat, and would choose to pick a bone, even when plentifully supplied with vegetables and dried fruits.

Mr. Gray exhibited a specimen of a *Tortoise* which he regarded as the type of a new genus in the family *Emydidæ*. It is characterized as follows :

PLATYSTERNON.

Sternum latum, anticè truncatum, posticè emarginatum. Scutella sterni 12 : *quorum duo anteriora brevia, lata, per totam sterni latitudinem extensa. Symphysis scutellorum pectoralium abdominaliumque extremitatibus tecta : scutellis axillari inguinalique magnis ; inter quæ scutellum tertium accessorium iis simile ; scutella hæc tria in suturam symphysis inserta.*

Caput maximum, cute corneâ continuâ tectum. Cauda longissima, teres, attenuata ; supernè serie unicâ, infernè duplici, squamarum tecta ; haud cristata.

This genus is intermediate between *Emys* and *Chelydra*. It has the broad *sternum* and simple tail of the former genus; and possesses, in common with the latter, a large head, and the peculiar plates which are situated between the outer extremities of the pectoral and abdominal, and the marginal dorsal plates. It differs from *Chelydra*, however, in the peculiar plate which covers the *symphysis* of the *sternum* being here comparatively very small, not exceeding in size the axillary and inguinal plates, and in its being inserted in the same line with them.

The only species known was characterized as the

Platysternon megacephalum. *Plat. capite brunneo, obscurè nigro radiato: testâ supernè saturatè brunneâ, infrà pallidè flavâ: marginibus scutellorum sulcis aliquot obscuris striisque radiantibus confertis.*

Long. testæ, 3½ unc.; sterni, 2¾: latitudo testæ, 2⅝; sterni anticè, 2½: long. capitis 2⅝; caudæ, 3.

Hab. in Chinâ.

In illustration of the conterminous genus *Emys*, Mr. Gray exhibited a specimen of the *Em. Caspica*, Schw., recently obtained from the Mediterranean.

Mr. Gray also exhibited a specimen of the animal (*Ocythoë*) found in the shells of the genus *Argonauta*, in illustration of some observations on the disputed question of its parasitic or non-parasitic nature. He stated that he had lately examined ten specimens, four of them referable to *Ocythoë Cranchii*, and the remainder to *Ocythoë antiquorum*; there being, however, little to distinguish them except the size. All these specimens, as well as all those which have been figured, were females, and had eggs inclosed in the hinder part of the shell, in the cavity which is uniformly found behind the body of the animal. In all, the posterior *siphon* was placed more or less exactly in the keel of the shell, but the body did not always occupy a symmetrical position with regard to it, the eye of one side being sometimes nearer to the spire than that of the opposite side. Only one or two of these individuals had their bodies marked with the ridges of the shells, the impressions of which were, however, mostly observable upon the arms. The animals all appeared to be retained in the shells by the inflection of the anterior pair of arms. Mr. Gray added that he had also lately seen several specimens preserved without shells, and having their bodies shaped exactly like that of the common *Octopus*, without the slightest appearance of their having been inclosed in shells: the history of these specimens he was unable to trace, and he could not therefore affirm that they were found in the state in which he observed them.

From these facts Mr. Gray stated that he was inclined to regard it as probable that the *Ocythoë* is only parasitic in the shell of *Argonauta*; that the shells are only resorted to by females during the breeding season for the protection of their eggs; and that the chief purpose of the dilated portion of the anterior arms is to retain the animal in the shell. He remarked, that no author, so far as he was aware, had distinctly stated of his own observation that these parts are expanded in the form of sails before the wind, a service which they seem to be incapable of performing, except in poetic fiction.

July 26, 1831.

Dr. Marshall Hall in the Chair.

Specimens were exhibited of two *Mammalia*, presented to the Society by J. Boyle, Esq., Colonial Surgeon, Sierra Leone. They were the remains of animals which died on their passage homewards, and had unfortunately been put after death into brine too weak for their perfect preservation. Since their arrival in the Museum they had been transferred to strong spirit, with the view of preserving as completely as their then state would permit, specimens of so much interest. One of them was stated by Mr. Bennett to be a fully grown *Aulacodus Swinderianus*, Temm.; the other a *Lemuridous* species, which is probably the animal noticed and imperfectly represented by Bosman under the name of *Potto*. The latter was shown to be the type of a new genus, which Mr. Bennett characterized as follows:

PERODICTICUS.

Facies subproducta. Artus subæquales. Cauda mediocris. Index brevissimus, phalange ungueali solum exserto. Dentes primores supernè 4, subæquales; infernè 6, graciles, declives: canini, $\frac{1}{1}\frac{1}{1}$, *conici, compressi, marginibus antico posticoque acutis: molarium in maxillá superiore primus minimus; secundus major; ambo conici; tertius acutè tuberculatus, tuberculis duobus externis alteroque interno; quartus præcedenti similis tuberculo interno majore; sequentes (in specimine juniore desunt); in maxillâ inferiore, duo conici æquales; tertius acutè externè 2-, internè 1-tuberculatus, sequentes (desunt).*

PERODICTICUS GEOFFROYI. *Per. castaneus, infrà pallidior, pilis raris cinereis interjectis: vellere lanato.*

Potto, *Bosman, Guin.* ii. 35. No. 4?
Lemur Potto, *Gmel., Linn. Syst. Nat.* 42?
Nycticebus Potto, *Geoff., Ann. Mus.* xix. 165?
Galago Guineensis, *Desm. Mamm.* 104, No. 127?
Hab. in Sierra Leone.

The head is rounded, with a projecting muzzle: the nostrils are lateral, small, sinuous, with an intermediate groove extending to the upper lip: the tongue is rough with minute *papillæ*, rather large, thin and rounded at the tip, and furnished beneath with a tongue-like appendage, which is shorter than the tongue itself and terminates in about six rather long lanceolate processes, forming a pectinated tip; the eyes are small, round, somewhat lateral, and oblique: the ears moderate, open, slightly hairy, both within and without. The body is rather slender. The limbs are nearly equal, long, and slender: the fingers moderately long. On the fore-hands the *index* is excessively short, the first *phalanx* being concealed, and the ungueal *pha-*

lanx (the only *phalanx* free) being barely large enough to support a rounded nail, which does not exist on the specimen, but of which there is an apparent *cicatrix;* the nails of all the other fingers are flat and rounded. Those of the hinder hands are similar, except that of the fore-finger, which, as in the *Lemurs* generally, is long, subulate, and curved. The tail is of moderate length, and covered with hairs resembling those of the body. The hairs generally are long, soft, and woolly; each of them being mouse-coloured at the base; rufous in the middle, and paler at the tip; some few are tipped with white. Hence results on the upper surface and on the outsides of the limb a chestnut colour with a slight mixture of grey: the under surface is much paler. The muzzle and chin are almost naked, having only a few scattered whitish hairs.

The measurements of the specimen are: length of the head, 2 inches 2 tenths; of the body, 6 inches; of the tail, 1 inch 6 tenths, or including the hair, 2 inches 3 tenths. The breadth of the head in front of the ears is 1 inch 4 tenths: the distance between the eyes, 4 tenths; from the anterior angle of the eye to the end of the nose, 7 tenths; from the eye to the ear, 7½ tenths: length of ears behind, 5, of their aperture 8, breadth 5 tenths of an inch.

Anterior Limbs.	in.
humerus	1·7
ulna	2·1
carpus to end of 4th (longest) finger	1·8
thumb with metacarpal bone	1·0
fore-finger	·4
— last joint (all that is free)	·1
3rd finger	·9
4th finger	1·1
5th finger	·9
span	2·4

Posterior Limbs.	in.
femur	1·8
tibia	1·9
from *os calcis* to end of 4th (longest) finger . . .	2·3
thumb with metatarsal bone	1·1
fore-finger (including nail 2·5)	·8
3rd finger	·9
4th finger	1·2
5th finger	·9
span	2·7

By the comparative length of the tail the genus *Perodicticus* is readily distinguishable from the other *Lemuridæ*. In this, in the moderate elongation of the face, in the moderate size of the ears, in the equality of the limbs, and especially in the extreme shortness of the *index* of the anterior hands, reside its essential characters. The latter character is especially important, and may be regarded as indicating its typical station in a family, all of which are distinguished from the neighbouring groups by a variation in the form of the *index* or of its appendages. In the *Lemuridæ* generally the nail of the *index* of the hinder hands is elongated and claw-shaped, and unlike those of the other fingers, which are flat as in the *Monkeys*. This is frequently accompanied by an abbreviation of the *index* of the fore-hands, which becomes in *Loris*, Geoff., very considerable, and is in *Perodicticus* carried to its *maximum*, that organ being here almost obsolete.

The habits of the animal are described by Mr. Boyle as "slothful and retiring. It seldom makes its appearance but in the night time, when it feeds upon vegetables, chiefly," he believes, "the *Cassada*. It is known to the colonists as the *Bush-Dog*."

The specimen of *Aulacodus*, being fully adult, was shown to add much to the knowledge previously possessed of an animal, only one individual of which had hitherto been seen by naturalists, and that individual so young as not to have attained its perfect characters. Mr. Bennett pointed out the deviations, in the specimen exhibited, from the description published by M. Temminck in his 'Monographies de Mammalogie', and proposed the following amended generic character:

AULACODUS, Van Swind.

Dentes incisores $\frac{2}{2}$, *anticè plani, scalpro cuneato, superiores profundè bisulcati: molares* $\frac{4}{4}\frac{4}{4}$, *lamellares: sacculi buccales* 0 : *pedes antici digitis* 4, *cum rudimento pollicis; postici digitis* 4 : *ungues, præter pollicis subplanum, falculares, fortes, supernè rotundati, infrà dilatati sulcati: cauda pilosa, mediocris, attenuata.*

The deep *sulci* on the anterior surface of the incisor teeth of the upper jaw are situated nearer to the inner than to the outer edge of the tooth, and divide its face into three ridges, the inner of which is half the breadth of the middle, and the middle less than half the breadth of the outer. The molar teeth of the upper jaw have two re-entering folds of enamel on the outer, and one on the inner side; the outer passing beyond the middle of the crown, the inner central and less deeply entering: all the teeth are nearly equal in size: the anterior three are nearly square; the posterior somewhat rounded: there is no notching on the outer edge, but a distinct notch exists where the enamel folds in on the inner side, especially of the three posterior teeth. In the lower jaw the first molar has three folds of enamel on the inner side passing beyond the middle of the crown, and one small fold slightly notched on the outer: the second and third have two inner folds and one outer, all notched at the edge: the posterior is nearly similar, but more rounded behind. This system of dentition bears a greater resemblance to that of *Erethizon*, F. Cuv., than to that of any other genus of the *Rodentia*.

The covering of the *Aulacodus Swinderianus* is peculiar, consisting entirely, except on the tail, of flattened somewhat spine-like bristles, from 1 to $1\frac{1}{2}$ inch in length, the tips only of which are flexible and hair-like: the dark space which occupies the greater portion of each of the bristles exhibits a changeable metallic lustre, varying in different positions from deep steel blue to bright copper red.

The length of the body and head is 17 inches, or measured along the convexity of the back, 20: of the tail, 9: of the head, $4\frac{1}{2}$: of the fore-leg, $3\frac{1}{2}$; *tarsus* and toes, $1\frac{1}{2}$: of the *femur*, $4\frac{1}{2}$; *tibia*, $4\frac{1}{2}$; *tarsus* and toes, $3\frac{1}{2}$: the ear, nearly concealed by the bristly covering, is $1\frac{1}{6}$ long, and 1 inch broad.

Mr. Boyle states that this animal "is called by some the *Ground-Pig*, by others, the *Ground-Rat*. It feeds upon ground nuts, *Cassada*, and other roots. On the passage homewards it ate potatoes, and was becoming very docile."

It is very probably the "wild Rat, bigger than a Cat" mentioned by Bosman.

A small collection of *Fishes*, formed during the voyage of H. M. S. Chanticleer, and presented to the Society by the Lords Commissioners of the Admiralty, together with numerous other Zoological specimens obtained during the same voyage, was laid upon the table. It contained among others a young individual of the *Scyllium cirratum*, in the state in which it is described by Schneider as the *Squalus punctatus*: a specimen of the *Blennius pilicornis*, Cuv., described originally by Marcgrave, and remarkable for the long acicular tooth at the back of the lower jaw on each side, a peculiarity which may hereafter cause it to be regarded as the type of a distinct genus: a specimen of the *Antennarius scaber*, *Chironectes scaber*, Cuv., also described by Marcgrave: and two species which appeared to be new to science, and which were thus characterized by Mr. Bennett:

CHROMIS TÆNIA. *Chrom. brunneo-nigrescens: pinnis nigrescentibus; caudali subrotundatá nigro fasciatim punctatissimá: maculâ rotundá infraoculari, alterâ ad basin pinnæ caudalis supernè, tæniáque ab oculo per medium latus ad pinnam caudalem ductâ, nigris.*

D. $\frac{15}{11}$. A. $\frac{4}{9}$. P. 13. C. 16.

Hab. apud Trinidad.

Affinis *Chrom. punctato*, Cuv., (*Labrus punctatus*, L.). Differt a figurâ Blochianâ tæniâ laterali, pinnisque haud lineatis: differt etiam numero radiorum pinnarum.

MONACANTHUS SETIFER. *Mon. caudâ hispidâ: cirris brevibus multifidis raris conspersus: pinnæ dorsalis radio 2do longissimo: pallidè brunneus, lateribus mediis nigro undulatim longitudinaliter lineatis: pinnæ caudalis rotundatæ fasciâ angustâ submediâ.*

D. 1, 28. A. 29. C. 12. P. 12.

A description, by the Rev. Robert Holdsworth, of a fish taken in the seine, at Start Bay, on the south coast of Devon, in August 1825, was read. Mr. Holdsworth regards the fish in question as the *Umbrina*, *Sciæna Aquila*, Cuv.; with which species, occasionally taken in the English Channel, his description agrees.

August 9, 1831.

Dr. Horsfield in the Chair.

A letter from George Swinton, Esq., of Calcutta, Corr. Memb. Z. S., addressed to the Secretary, was read, announcing the transmission to England, as a present to the Society, of an entire *Dugong*, preserved in spirit and brine, which he hoped would arrive in a sufficiently perfect state to admit of its dissection.

Specimens of two species of *Bats*, presented to the Society with a numerous and valuable collection of birds formed at Madras by Josiah Marshall Heath, Esq., F.L. & Z.S., were exhibited, and Dr. Horsfield identified them as the *Megaderma Lyra*, Geoff., and a new species of the genus *Nycticejus*, Rafin. He pointed out in the former some discrepancies in the colouring from that described by M. Geoffroy Saint-Hilaire, apparently from a specimen preserved in spirit; the individual before the Meeting agreeing much more nearly with the colours as recently described by M. Isidore Geoffroy Saint-Hilaire, from whose description it scarcely differed, except in the less intensity of the rufous tinge of the tips of the hairs of the upper surface.

Of the *Nycticejus* two specimens were exhibited, on which Dr. Horsfield pointed out the characters by which that group had been generically distinguished from *Vespertilio* as circumscribed by modern authors. He remarked on the geographical distribution of the genus, which might be regarded altogether as an American form, were it not for the existence of a species in Java described by him in his 'Zoological Researches' as the *Vespertilio Temminckii*, and of the present species obtained on the Continent of India. As the second Indian species of this group, he regarded the present acquisition as peculiarly interesting. It is considerably larger than the Javanese species, from which it differs also remarkably in its colouring.

Dr. Horsfield thus characterized and described the species:

NYCTICEJUS HEATHII. *Nyct. capite cuneato supra lateribusque planis, auriculis capite brevioribus oblongis rotundatis margine exteriore parum excisis trago elongato falcato, vellere pilis sericatis brevissimis, notæo fusco, gastræo fulvo.*

Long. corporis (caudâ inclusâ), 6 unc.: expansio extremitatum anteriorum, 18 unc.

The head is of moderate length, nearly even above and compressed at the sides. The muzzle is broad and abruptly terminated. The nose is slightly emarginate. The eyes ———. The mouth is proportionally small. The lips are not rugose, and are nearly covered with delicate hairs. The ears are shorter than the head; the auricle oblong, erect, rounded, naked and slightly indented posteriorly, terminating below in a small lobule; the *tragus* linear, erect, falciform, and shorter than the auricle.

The animal is uniformly and thickly covered by a short, very soft, delicate silky hair, closely applied to the skin: this hair is about a line in length on the back, but shorter and more delicate on the head; on the breast it is somewhat longer and downy. The colour of the body and hair above is brown with a tawny hue; underneath fulvous with a slight tendency to gray; the tint being uniformly distributed over the throat, breast, *abdomen* and sides. The transparent membrane is uniformly brown.

The collection of *Birds* formed by Major James Franklin, F.R.S. &c., on the banks of the Ganges and in the mountain chain of Upper Hindoostan, and presented to the Society by the Physical Committee of the Asiatic Society of Calcutta, (which had been laid on the table on the 23rd November last,) was again exhibited. The exhibition had been commenced at the previous Meeting of the Committee, when the *Raptorial* and *Insessorial Birds* were brought under the notice of the Members present; and it was now concluded by the *Rasorial*, *Wading*, and *Swimming Birds*. On the former occasion, Mr. Vigors, and on the latter, Mr. Yarrell, availed themselves of the opportunity to remark on the geographical distribution of many of the species contained in the collection, and on other points connected with their history. They were exhibited in the order of the following

Catalogue of Birds (systematically arranged) which were collected on the Ganges between Calcutta and Benares, and in the Vindhyian hills between the latter place and Gurrah Mundela, on the Nerbudda, by Major James Franklin, F.R.S. &c.

ORDO I. RAPTORES.

Fam. FALCONIDÆ.

Sub-Fam. *Aquilina*.—Genus *Aquila*.

1. AQUILA VINDHIANA. *Aq. pallidè brunneo variegata; capite, pectore, remigibus secundariis, caudâque saturatioribus, hujus apice albido graciliter marginato; remigibus primariis nigris; capitis collique plumis pallido-rufo lanceolatis.*
   Longitudo 26 unc.
   Cawnpoor Eagle, Lath.?

Sub-Fam. *Falconina*.—Genus *Falco*.

2. *Falco Subbuteo*, Linn. *Hobby*, Penn. *Le Hobereau*, Buff.
3. *Falco Chicquera*, Daud. *Chicquera Falcon*, Lath. *Le Chicquera*, Le Vaill.
4. *Falco Tinnunculus*, Linn. *Kestril*, Penn. *La Cresserelle*, Buff.

Sub-Fam. *Buteonina*.—Genus *Buteo*.

5. *Buteo Bacha*. *Falco Bacha*, Daud. *Bacha Falcon*, Lath. *Le Bacha*, Le Vaill.

Genus *Circus.*

6. **Circus Teesa.** *Circ. capite corporeque rufo-brunneis, plumarum rhachibus fuscis; dorso imo, rectricibusque ferrugineis, his fasciis subobsoletis fuscis septem circiter notatis; remigum tectricibus abdomineque albescenti notatis; femorum tectricibus crissoque rufescenti-albis; fronte, gulâ, nuchæque fasciâ gracili albis; rostro pedibusque flavis, illius apice nigro.*
Longitudo 17½.
Zuggun Falcon, Lath.?

7. *Circus cyaneus. Falco cyaneus,* Linn. *Hen Harrier,* Penn.

8. *Circus melanoleucus. Falco melanoleucus,* Gmel. *Black and white Indian Falcon,* Penn. *Le Tchoug,* Le Vaill.

9. *Circus rufus,* Briss. *Moor Buzzard,* Penn. *Le Busard,* Buff.

Sub-Fam. *Milvina.*—Genus *Elanus,* Savigny.

10. *Elanus Melanopterus,* Leach. *Le Blac,* Le Vaill.

Fam. *Strigidæ.*—Genus *Otus.*

11. **Otus Bengalensis.** *Ot. pallidè rufescens, fusco alboque undulatim variegatus; nuchæ pectorisque plumis in medio strigâ latâ brunneo-nigrâ notatis; abdomine fusco graciliter fasciato; remigibus rectricibusque lateralibus prope apicem brunneo fasciatis, his mediis per totam longitudinem similiter notatis.*
Longitudo 20.
Dr. Latham alludes to this as a variety of the *great-eared Owl.*

Genus *Noctua.*

12. **Noctua Indica.** *Noct. cinereo-brunnea; capite guttis parvis albis, alis grandioribus notatis; abdomine albo, maculis brunneis lunulatis notato; remigibus rectricibusque albo fasciatis; regione circumoculari, gulâ, fasciâque subgulari ad aures extendente albis.*
Fœm. *magis rufescens, abdomine magis fasciatim maculato.*
Longitudo 9.
Indian Spotted Owl, Lath.?

Ordo II. INSESSORES.

Tribus Fissirostres.

Fam. *Meropidæ.*—Genus *Merops.*

13. *Merops Philippinus,* Linn. *Philippine Bee-eater,* Lath. *Grand Guêpier des Philippines,* Buff.

14. *Merops viridis,* Linn. *Indian Bee-eater,* Lath. *Guêpier à collier de Madagascar,* Buff.

Fam. *Hirundinidæ.*—Genus *Hirundo.*

15. *Hirundo Klecho,* Horsf. *Klecho Swallow,* Lath. *Hirondelle longipenne,* Temm.

16. **Hirundo filicaudata.** *Hir. supra purpurascenti-atra, remigibus fuscis; corpore subtùs maculisque rectricum omnium late-*

ralium albis; capitis vertice rufo; rectrice utrinque laterali elongato, ad apicem gracillimo.
Statura *Hir. ripariæ.*
Wire-tailed Swallow, Lath.

17. *Hirundo riparia*, Linn. *Sand Martin*, Penn. *L'Hirondelle de rivage*, Buff.

Genus *Cypselus.*

18. *Cypselus affinis*, Hardw. *Allied Swift*, Hardw.
19. *Cypselus Palmarum*, Hardw. *Balassian Swift*, Lath.

Fam. *Caprimulgidæ.*—Genus *Caprimulgus.*

20. CAPRIMULGUS MONTICOLUS. *Cap. pallidè cinereo-brunneo, rufo, fuscoque sparsim variegatus; abdomine rufescenti-fusco fasciato; remigibus secundariis rufo nigroque fasciatis, primariis brunnescenti-nigris, quatuor externis fasciâ latâ albâ in medio notatis; rectricibus sex mediis fasciis gracilibus nigris undulatis, duabus utrinque lateralibus albis apicibus brunneis.*
Fœm. *fasciâ alarum rufâ; caudâ concolori (sine albo).*
Longitudo 10.
Great Bombay Goatsucker, Lath.?

21. *Caprimulgus Asiaticus*, Lath., Ind. Orn. *Bombay Goatsucker*, Lath.

Fam. *Halcyonidæ.*—Genus *Alcedo.*

22. *Alcedo Bengalensis*, Gmel. *Little Indian Kingsfisher*, Edw.
23. *Alcedo rudis*, Linn. *Black and white Kingsfisher*, Edw.

Genus *Halcyon.*

24. *Halcyon Smyrnensis. Alcedo Smyrnensis*, Linn. *Smyrna Kingsfisher*, Lath. *Martin pêcheur de la côte de Malabar*, Buff.

Tribus DENTIROSTRES.

Fam. *Muscicapidæ.*—Genus *Muscicapa.*

25. *Muscicapa Banyumas*, Horsf. *Banyumas Flycatcher*, Lath. *Gobe-mouche Chanteur*, Temm.
26. *Muscicapa nitida*, Lath., Ind. Orn. *Nitid Flycatcher*, Lath.

Genus *Muscipeta.*

27. *Muscipeta Paradisi. Muscicapa Paradisi*, Linn. *Paradise Flycatcher*, Lath. *Gobe-mouche Tchitrec-be, roux et blanc*, LeVaill.
28. *Muscipeta peregrina. Parus peregrinus*, Gmel. *Crimson-rumped Flycatcher*, Lath. *Gobe-mouche Oranor*, Le Vaill.

Genus *Rhipidura.*

29. RHIPIDURA ALBOFRONTATA. *Rhip. capite colloque nigris; dorso cinereo-nigro; alis caudâque fusco-nigris; fasciâ subgracili frontali super oculos ad nucham extendente, pectore, abdomine, maculis tectricum alarum, apicibusque rectricum, duabus mediis exceptis, albis.*
Longitudo 6.
White-browed Flycatcher, Lath.?

30. RHIPIDURA FUSCOVENTRIS. *Rhip. capite nigro; dorso abdomineque cinereo-nigris; alis caudâque fusco-nigris; strigâ brevi superciliari colloque in fronte albis; rectricum trium lateralium apicibus albescentibus.*
Longitudo 7½.
Broad-tailed Flycatcher, Lath. ?

Fam. *Laniadæ.*—Genus *Ocypterus.*

31. *Ocypterus leucorhynchus. Lanius leucorhynchus*, Linn. *White-billed Shrike*, Lath. *Pie-grièche de Manille*, Buff.

Genus *Edolius.*

32. *Edolius cærulescens. Lanius cærulescens*, Linn. *Fork-tailed Indian Butcher-bird*, Edw.

Genus *Lanius.*

33. LANIUS MUSCICAPOÏDES. *Lan. brunnescenti-cinereus subtus albescens; strigâ superciliari rufescenti-albâ; alis rectricibusque fusco-brunneis, his duabus lateralibus albis basi notâque ad apicem fusco-brunneis.*
Fœm. aut Mas jun. *capite corporeque suprà albido maculatis.*
Longitudo 6½.
Keroula Shrike, Lath. ?

Genus *Collurio.*

34. *Collurio Excubitor. Lanius Excubitor*, var. Linn. *Cinereous Shrike*, var. C. Lath.

35. *Collurio erythronotus*, Proceed. Zool. Soc. p. 42. *Grey-backed Shrike*, Lath. ?

36. COLLURIO NIGRICEPS. *Col. capite suprà, nuchâ, alis, caudâque nigris; gulâ, pectore, abdomine medio, maculâque in medio alarum, albis; dorso cinereo; scapularibus, uropygio, abdominis lateribus, crissoque rufis.*
Longitudo 8½.
Indian Shrike, Lath. ?

37. *Collurio Hardwickii*, Proceed. Zool. Soc. p. 42. *Bay-backed Shrike*, Lath. ?

Genus *Graucalus.*

38. *Graucalus Papuensis*, Cuv. *Corvus Papuensis*, Gmel. *Papuan Crow*, Lath.

Genus *Ceblepyris.*

39. *Ceblepyris cana*, Temm. *Muscicapa cana*, Gmel. *Ash-coloured Flycatcher*, Lath.

40. *Ceblepyris fimbriatus*, Temm. *Echenilleur frangé*, Temm.

Fam. *Merulidæ.*—Genus *Pitta.*

41. *Pitta brachyura. Corvus brachyurus*, Linn. *Short-tailed Crow*, var. B. Lath. *Short-tailed Pie*, Edw.

Genus *Oriolus.*

42. *Oriolus Galbula*, Linn. *Golden Oriole*, Lath. *Le Loriot*, Buff.

43. *Oriolus melanocephalus*, Linn. *Black-headed Oriole*, Lath. *Loriot de la Chine*, Buff.

44. ORIOLUS MADERASPATANUS. *Or. fronte, corpore suprà, tectricibus alarum, abdomineque luteis; capite suprà, genis, remigibus, notâque medianâ rectricum fusco-atris; gulâ albâ striis fusco-atris.*
Longitudo 9.
Oriolus Galbula, var. γ. Lath. *Yellow Indian Starling*, Edw. *Yellow Starling from Bengal*, Albin.

Genus *Turdus.*

45. *Turdus macrourus*, Gmel. *Long-tailed Thrush*, Lath.

46. *Turdus Saularis.* *Gracula Saularis*, Linn. *Pastor Saularis*, Temm. *Little Indian Pie*, Edw.

Genus *Timalia.*

47. TIMALIA CHATARÆA. *Tim. suprà pallidè brunnescenti-, subtùs rufescenti-cinerea; capite corporeque suprà lineis fuscis striatis; rectricibus fusco obsoletè fasciatis; rostro pallido.*
Longitudo 9¾.
Gogoye Thrush, Lath.?

48. *Timalia pileata*, Horsf. *Pileated Thrush*, Lath.

49. TIMALIA HYPOLEUCA. *Tim. suprà rufescenti-brunnea, subtùs alba; alis rufis; his caudâque subtùs cinereis, rectricibus fusco obsoletè fasciatis; rostro nigro.*
Longitudo 6½.

50. TIMALIA HYPERYTHRA. *Tim. suprà olivascenti-brunnea; capite in fronte corporeque toto subtùs rufis; caudâ supernè fusco obsoletè fasciatâ; rostro pallido.*
Longitudo 5.

Genus *Ixos.*

51. *Ixos jocosus.* *Lanius jocosus*, Linn. *Jocose Shrike*, Lath.

52. *Ixos Cafer.* *Turdus Cafer*, Linn. *Cape Thrush*, Lath. *Le Cou-rouge*, Le Vaill.

53. *Ixos fulicata.* *Motacilla fulicata*, Linn. *Sooty Warbler*, var. Lath. *Traquet noir des Philippines*, Buff.

Fam. *Sylviadæ.*—Genus *Iora.*

54. *Iora scapularis*, Horsf. *Scapular Wagtail*, Lath.

Genus *Sylvia.*

55. *Sylvia Hippolais*, Lath. Ind. Orn. *Lesser Pettichaps*, Lath. *Reed Wren*, Lath.

This is the bird alluded to under Dr. Latham's *Reed Wren*, as an Indian variety called *Tickra* and *Ticktickee.*

Genus *Prinia.*

56. PRINIA CURSITANS. *Prin. corpore suprà pallidè brunneo, fusco striato; gulâ juguloque albis; abdomine rufescente; rectricibus mediis fuscis, omnibus subtùs ad apicem fasciâ nigrâ albo terminatâ notatis.*
Longitudo 4.

57. PRINIA MACROURA. *Prin. suprà grisescenti-brunnea; capite, alis, uropygioque subrufescenti tinctis; subtùs ferrugineo-albida; rectricibus quatuor mediis saturatioribus fusco obsoletè fasciatis, subtùs ad apicem fusco leviter notatis.*
Longitudo 5½.

58. PRINIA GRACILIS. *Prin. cinereo-grisea; dorso, alis, caudâque olivascentibus; gulâ, pectore, abdomineque subtùs albidis; rectricibus subtùs griseis fasciâ nigrâ albo terminatâ notatis.*
Longitudo $4\frac{7}{10}$.
Foodkey Warbler, Lath. ?

Genus *Motacilla*.

59. MOTACILLA PICATA. *Mot. capite, collo, corporeque suprà nigris; strigâ utrinque superciliari alterâque longitudinali alarum, corpore subtùs, rectricibusque duabus lateralibus albis.*
Longitudo 9.
Pied Wagtail, Lath. pl. 104.

60. *Motacilla flava*, Linn. *Bergeronnette jaune*, Buff., & *Bergeronnette de printemps*, Buff. *Yellow Wagtail*, Lath.

This is the Indian bird alluded to by Dr. Latham under the head of *Yellow Wagtail*, called *Peeluck*, which is its Indian name.

Genus *Saxicola*.

61. *Saxicola rubicola*, Temm. *Stone Chat Warbler*, Lath.

Genus *Phœnicura*.

62. *Phœnicura atrata*, Jard. & Selb. *Indian Redstart*, Iid.

Fam. *Pipridæ*.—Genus *Parus*.

63. *Parus atriceps*, Horsf. *Mésange cap-négre*, Temm.

Tribus CONIROSTRES.

Fam. *Fringillidæ*.—Genus *Alauda*.

64. ALAUDA CHENDOOLA. *Al. suprà pallidè grisescenti-brunnea, plumis fusco in medio notatis; corpore subtùs strigâque superciliari albis; rectricibus brunneis, duarum utrinque lateralium pogoniis externis albis; pectore brunneo maculato, capite cristato.*
Statura *Al. arvensis*, Linn.

65. ALAUDA GULGULA. *Al. pallidè rufescenti-brunnea, plumis in medio latè et intensè brunneo lineatis; subtùs albescens, pectore brunneo lineato; femoribus rufescentibus; rectricibus brunneis, externâ utrinque ferè totâ, secundæ pogonio externo, albis.*
Statura ferè præcedentis.

Genus *Mirafra*.

66. *Mirafra Javanica*, Horsf. *Alouette mirafre*, Temm.

67. MIRAFRA PHŒNICURA. *Mir. pallidè cinereo-brunnea; corpore subtùs, remigum pogoniis internis, rectricumque basi rufis; rostro albo, culmine apiceque fuscis.*
Longitudo 5.

Genus *Emberiza*.

68. *Emberiza Baghaira*. *Baag-geyra Lark*, Lath.

This bird is the common *Ortolan* of India, called *Baghairi*.

79. *Emberiza Gingica*, Gmel. *Duree Finch*, Lath.

70. *Emberiza cristata*, Gould's Century of Himalayan Birds.

71. *Emberiza Bengalensis*. *Baya Berbera*, Asiat. Res. *Loxia Bengalensis*, Linn.

The Hindu name of this bird is *Baya*; its Sanscrit name *Berbera*.

Genus *Fringilla*.

72. *Fringilla Amandava*, Linn. *Le Bengali Piqueté*, Buff.

73. *Fringilla formosa*, Lath. *Lovely Finch*, Lath.

74. *Fringilla Malabaria*, ——. *Loxia Malabarica*, Linn. *Malabar Grosbeak*, Lath.

75. FRINGILLA FLAVICOLLIS. *Fring. suprà cinereo-grisea, subtus albida; jugulo maculâ flavâ notato; humeris ferrugineis; alis maculis albis fascias duas exhibentibus notatis.*
Longitudo $5\frac{3}{10}$.

This bird, though placed amongst the *Finches*, differs in the form of its bill, and it may perhaps hereafter be found expedient to remove it.

Genus *Ploceus*.

76. *Ploceus Philippinus*, Cuv. *Philippine Grosbeak*, Lath.

Fam. *Sturnidæ*.—Genus *Pastor*.

77. *Pastor roseus*, Temm. *Rose-coloured Thrush*, Lath. *Le Roselin*, Le Vaill.

78. *Pastor tristis*, Temm. *Merle des Philippines*, Buff.

79. *Pastor griseus*, Horsf. *Le Martin gris de fer*, Le Vaill.

80. *Pastor Contra* vel *Capensis*, Temm. *Etourneau Pie*, Buff.

81. *Pastor Pagodarum*, Temm. *Le Martin Brâme*, Le Vaill.

Fam. *Corvidæ*.—Genus *Corvus*.

82. *Corvus Corone*, Linn. *Carrion Crow*, Lath.

This bird appears to be the common *Carrion Crow* of India; it differs only in size from the European *Crow*, and in the greater elevation of the bill.

Genus *Coracias*.

83. *Coracias Bengalensis*, Linn. *Blue Jay from the East Indies*, Edw.

Genus *Pica*.

84. *Pica vagabunda*, Wagler. *Rufous Magpie*, Hardw.

Fam. *Buceridæ*.—Genus *Buceros*.

85. *Buceros Gingianus*, Lath. *Indian Hornbill*, Lath.

There is some confusion with regard to this bird in Dr. Latham's General History, under the heads of *Gingi* and *Indian Hornbill*: it is the *Dhanesa* of India.

86. *Buceros Malabaricus*, Gmel. *Unicorn Hornbill*, Lath.

There is also much confusion with regard to this bird under the heads of *pied Hornbill* and *Unicorn Hornbill* of Latham: it is the *Dhanesa* of the latter, var. B.

Tribus SCANSORES.

Fam. *Psittacidæ*.—Genus *Palæornis*.

87. *Palæornis torquatus*, Vig. *Psittaca Borbonica torquata*, Briss. *La Perruche à double collier*, Buff.

88. *Palæornis Bengalensis*, Vig. *Psittacus Bengalensis*, Gmel. *Blossom-headed Parakeet*, Lath. sp. 74. var. A.

89. PALÆORNIS FLAVICOLLARIS. *Pal. viridis; capite lilacino-cano, flavo marginato; rectricibus mediis cœruleis apice albo.*
Longitudo 12.

According to the description, this would appear to be Dr. Latham's *yellow-collared Parrakeet*; but he refers to figures which do not correspond.

Fam. *Picidæ.*—Genus *Bucco.*

90. BUCCO CANICEPS. *Buc. gramineo-viridis; capite, nuchâ, collo, pectoreque griseis; illius plumis in medio albido lineatis; rostro rubro; pedibus flavis; regione circumoculari nudâ flavescenti-rubrâ.*
Longitudo 10.
Fichtel's Barbet, Lath.?

This bird is the *Bura-Bussunta* of India, and appears to be the same as var. A. of Dr. Latham's *Fichtel's Barbet.*

91. *Bucco Philippinensis*, Gmel. *Barbu des Philippines*, Buff.

Genus *Picus.*

92. *Picus Bengalensis*, Linn. *Bengal Woodpecker*, Lath.
93. *Picus Mahrattensis*, Lath., Ind. Orn. *Mahratta Woodpecker*, Lath.

Fam. *Certhiadæ.*—Genus *Sitta.*

94. SITTA CASTANEOVENTRIS. *Sit. supernè griseo-plumbea; pectore abdomineque castaneis; strigâ a rictu per oculos ad nucham extendente, remigibus, rectricumque pogoniis internis nigris; gulâ maculâque rectricum lateralium albis.*
Longitudo 5.
Ferruginous-bellied Nuthatch, Lath.?

Genus *Certhia.*

95. CERTHIA SPILONOTA. *Certh. suprà griseo-fusca, albo maculata; capite albo graciliter striato; gulâ abdomineque albidis, hoc fusco fasciato; caudâ albo fuscoque fasciatâ.*
Longitudo 5½.

The tail of this bird is soft and flexible, in which respect it differs from the type of the genus, but it agrees in all others.

Genus *Upupa.*

96. *Upupa minor*, Shaw. *La Huppe d'Afrique*, Le Vaill.

Fam. *Cuculidæ.*—Genus *Leptosomus.*

97. *Leptosomus Afer.* *Cuculus Afer*, Gmel. *Edolian Cuckow*, Shaw.

Genus *Cuculus.*

98. *Cuculus canorus*, Linn. *Common Cuckow*, Lath.

This bird, on comparison with the *common Cuckow*, differs so little that it can scarcely be called a variety; it is the common *Cuckow* of India, and its habits and note resemble those of the European bird.

99. *Cuculus fugax*, Horsf. *Bychan Cuckow*, Lath.

The common Indian name of this bird is *Pīpīha* or *Pipeeha*, from its note; in Sanscrit *Chataca.* Dr. Buchanan named it *Cuculus radiatus.*

100. *Cuculus Sonneratii*, Ind. Orn.? *Le petit Coucou des Indes*, Sonn.? *Sonnerat's Cuckow*, Lath.?

Not having either specimen or figures to refer to, I conclude, from description alone, that this bird is *Sonnerat's Cuckow.*

Genus *Centropus.*

101. *Centropus Philippensis*, Cuv. *Coucou des Philippines*, Buff. *Chestnut Coucal*, Lath.

This bird is the *Mahooka* of India, so named from its note; it is called also, by the English, *Pheasant Crow*. Dr. Latham's *chestnut Coucal* very accurately describes it, but his figure is bad; having apparently been taken from a drawing of Gen. Hardwicke's, which stated it to be a young bird. Dr. Buchanan named it *Cuculus castaneus*.

Genus *Eudynamys.*

102. *Eudynamys Orientalis.* *Cuculus Orientalis*, Linn. *Eastern black Cuckow*, Lath. *Coucou noir des Indes & Coukeel*, Buff.

This bird is the *Coel* of India, and the *Coukeel* of Buffon.

103. *Eudynamys Sirkee.* *Centropus Sirkee*, Hardw. *Sirkeer Cuckow*, Lath.

Tribus TENUIROSTRES.

Fam. *Meliphagidæ.*—Genus *Chloropsis.*

104. *Chloropsis aurifrons*, Jard. & Selby. *Malabar Chloropsis*, Jard. & Selby.

This bird is the *Huréwa* of India, and is well described by Dr. Latham as the *Hurruwa Bee-eater.*

Fam. *Cinnyridæ.*—Genus *Cinnyris.*

105. CINNYRIS ORIENTALIS. *Cinn. capite, collo, dorsoque splendidè virescenti-purpureis; abdomine purpureo-atro; alis caudâque atris; fasciculo utrinque sub alis aurantiaco.*
Longitudo 4.
Eastern Creeper, Lath.

ORDO III. RASORES.

Fam. COLUMBIDÆ.

Genus *Vinago.*

106. *Vinago militaris.* *Columba militaris*, Temm. *Columbar Commandeur*, Temm. *Hurrial Pigeon*, Lath.

Genus *Columba.*

107. *Columba tigrina*, Temm. *Colombe à nuque perlée*, Temm.
108. *Columba Cambayensis*, Gmel. *Colombe maillée*, Temm.
109. *Columba risoria*, Linn. *Colombe Blonde*, Temm. *La Tourterelle Blonde*, Le Vaill.

Le Vaillant mentions a larger bird of this species which is common in Africa; the same thing occurs also in India, where there are two birds differing only in size.

110. *Columba humilis*, Temm. *Colombe terrestre*, Temm.

Fam. PHASIANIDÆ.

Genus *Pavo.*

111. *Pavo cristatus*, Linn. *Le Paon*, Buff. *Crested Peacock*, Lath.

Genus *Tragopan.*

112. *Tragopan Satyrus*, Cuv. *Meleagris Satyrus*, Linn. *Horned Pheasant*, Lath.

Fam. TETRAONIDÆ.

Genus *Pterocles.*

113. *Pterocles exustus*, Temm. *Ganga ventre-brulé*, Temm.

Genus *Francolinus.*

114. *Francolinus Ponticerianus*, Temm. *Francolin à rabat*, Temm.

115. *Francolinus vulgaris,* Steph. *Le Francolin,* Buff. *Francolin,* Edw.

Genus *Perdix.*

116. *Perdix picta,* Jard. & Selby. *Painted Partridge,* Iid. *Beautiful Partridge,* Lath.

117. *Perdix Hardwickii,* Gray. *Curria Partridge,* Lath.

118. *Perdix Cambayensis,* Temm. *Perdrix rousse-gorge,* Temm.

Genus *Coturnix.*

119. *Coturnix dactylisonans,* Meyer. *Common Quail,* Lath.

This bird is named *Ghagul;* it corresponds with the European species, and is not very common in India.

120. *Coturnix Coromandelica.* *Perdix Coromandelica,* Lath. *Perdix textilis,* Temm. *Caille nattée,* Temm.

This is the most common *Quail* of India called *Bhuteir.* Dr. Buchanan named it *Perdix olivacea.*

Genus *Hemipodius.*

121. *Hemipodius Dussumier,* Temm. *Turnix Dussumier,* Temm. *Mottled Quail,* Lath.

Fam. Struthionidæ.

Genus *Otis.*

122. *Otis Indica,* Ind. Orn.? *White-chinned Bustard,* Lath.?

This bird has usually been considered as the female of the *Otis aurita,* and has been so figured and described; but it is well known to be a distinct bird. It is the common *Leek* of India, called by the English *Bastard Florican.* I am not quite certain that Dr. Latham's *White-chinned Bustard* is the bird, but his description is so near, that I have not thought it proper to make new species.

Ordo IV. GRALLATORES.

Fam. Gruidæ.

Genus *Grus.*

123. *Grus Orientalis,* Briss. *Ardea Antigone,* Linn. *Indian Crane,* Lath.

Fam. Ardeidæ.

Genus *Mycteria.*

124. *Mycteria Australis.* *Ciconia Mycteria Australis,* Hardw. *Tetaar Jabiru,* Lath.

Genus *Ardea.*

125. *Ardea purpurea,* Linn. *Le Héron pourprè huppé,* Buff. *Crested Purple Heron,* Lath.

126. *Ardea speciosa,* Horsf. *Darter Heron,* Lath.

This bird is without doubt the *Darter Heron* of Dr. Latham; and the *Ardea speciosa* of Dr. Horsfield is, I think, merely the Javanese type of the same bird.

127. *Ardea Torra,* Buch. *Ardea Egretta,* Lath. Ind. Orn. var. *Ardea alba,* Linn. var. *Great Egret,* Lath. Indian variety *Torra* or *Bughletar.*

This is the Indian *White Egret,* and it differs only in size from the

European species, being somewhat smaller. Dr. Buchanan named it *Ard. Torra*, and when without its filiform appendages on the back, *Ard. Putea*; so that these Indian terms appear to correspond with *Ard. Egretta* and *Ard. alba.*

128. *Ardea Caboga*, Penn. *Caboga Heron*, Penn. *Gibraltar Heron*, Lath. var. A.

The term *Caboga* is a corruption of the Indian term *Gao-buga*, *Cow* or *Cattle Heron*, in allusion to its frequently being seen amongst cattle, like the *Gibraltar Heron.*

Genus *Botaurus.*

129. *Botaurus cinnamoneus. Ardea cinnamonea*, Gmel. *Cinnamon Heron*, Lath.

Genus *Nycticorax.*

130. *Nycticorax Europæus. Ardea Nycticorax*, Linn. *Night Heron*, Lath.

Genus *Tantalus.*

131. *Tantalus papillosa. Ibis papillosa*, Temm. *Bald Ibis*, Lath.

Fam. SCOLOPACIDÆ.

Genus *Rhynchæa.*

132. *Rhynchæa Orientalis*, Horsf. *Cape Snipe*, Lath. *Bécassine de Madagascar*, Buff.

Genus *Tringa.*

133. *Tringa ochropus*, Linn. *Green Sandpiper*, Penn.
134. *Tringa Glareola*, Linn. *Wood Sandpiper*, Penn.
135. *Tringa pusilla*, Linn. *Little Sandpiper*, Lath.
136. *Tringa hypoleucos*, Linn. *Common Sandpiper*, Lath.

Fam. RALLIDÆ.

Genus *Parra.*

137. *Parra phœnicura. Gallinula phœnicura*, Lath., Ind. Orn. *Red-tailed Gallinule*, Lath. *Poule-Sultane de la Chine*, Buff.
138. *Parra Sinensis*, Gmel. *Chinese Jacana*, Lath.
139. *Parra Indica*, Lath., Ind. Orn. *Indian Jacana*, Lath.

Genus *Rallus.*

140. *Rallus niger*, Gmel. *Black Rail*, Lath.

Genus *Porphyrio.*

141. *Porphyrio hyacinthinus. Fulica Porphyrio*, Linn. *Purple Water-hen*, Edw.

Fam. CHARADRIADÆ.

Genus *Vanellus.*

142. *Vanellus Goensis. Tringa Goensis*, Lath. *Vanneau armé de Goa*, Buff.
143. *Vanellus ventralis. Charadrius ventralis*, Wagl. *Spur-winged Plover*, Hardw.
144. *Vanellus bilobus. Charadrius bilobus*, Gmel. *Bilobate Sandpiper*, Lath.

Genus *Cursorius.*

145. *Cursorius Asiaticus*, Gmel. & Lath. *Courvite de la Côte de Coromandel*, Buff.

Genus *Himantopus.*

146. *Himantopus melanopterus. Charadrius Himantopus*, Linn. *L' Echasse*, Buff.

Genus *Charadrius.*

147. CHARADRIUS HIATICULOÏDES. *Char. suprà griseo-fuscus ; fasciâ frontali alterâque verticali, corpore subtùs, collarique nuchali albis ; lineâ sub oculis ad aures extendente, fasciâ ad frontem, torqueque pectorali subgracili ad nucham extendente nigris ; rectricibus, duabus mediis exceptis, albis, in medio nigro et griseo-brunneo notatis, fasciam semilunarem exhibentibus.*

This bird differs chiefly from the European species in size, being at least one third smaller, and in the narrowness of the pectoral band.

ORDO V. NATATORES.

Fam. ANATIDÆ.

Genus *Anser.*

148. *Anser Indicus,* Lath., Ind. Orn. *Barred-headed Goose,* Lath.
149. *Anser melanotos,* Gmel. *Black-backed Goose,* Lath.
150. *Anser Coromandeliana,* Gmel. *Sarcelle de la Côte de Coromandel,* Buff. *Anas Girra,* Hardw. *Girra Teal,* Lath.

Genus *Anas.*

151. *Anas arcuata,* Cuv. *Siley Teal,* Lath.

The name of this bird in India is *Siley* or *Silhei,* from its whistling note ; the English call it *whistling Teal ;* it scarcely differs from the Javanese species as figured by Dr. Horsfield.

152. *Anas Crecca,* Linn. *Common Teal,* Lath.

This bird is the *common Teal* of India, and agrees exactly with the British species.

Fam. COLYMBIDÆ.

Genus *Podiceps.*

153. *Podiceps minor,* Lath., Ind. Orn. *Little Grebe,* Lath.

Fam. PELECANIDÆ.

Genus *Carbo.*

154. *Carbo fuscicollis. Phalacrocorax fuscicollis,* Shaw. *Brown-necked Shag,* Lath.

Genus *Plotus.*

155. *Plotus melanogaster,* Gmel. *Black-bellied Darter,* Lath.

Genus *Sterna.*

156. *Sterna melanogastra,* Temm. *Hirondelle de mer à ventre noir,* Temm.

August 23, 1831.

Joseph Smith, Esq. in the Chair.

Two letters from Mr. J. B. Arnold of Guernsey were read, containing particulars of his experiments in the naturalization of Sea Fishes in a lake chiefly supplied with fresh water. The area of the lake is about five acres; its depth various; and its bottom also various, being muddy, gravelly, and rocky. The water is during nine months of the year drinkable for cattle, but in consequence of a supply which it receives through a tunnel communicating with the sea, is rather salt in summer, at which season the freshes do not come down so plentifully as at other times. The fishes introduced into the lake have been the *grey Mullet*, *Sole*, *Turbot*, *Brill*, *Plaice*, *Basse*, *Smelt*, and *grey Loach*. All of these have thriven well, and are believed to have increased in numbers: the *grey Mullet* especially is known to have bred as freely as in the sea itself. A single *Whiting* having been caught for three successive years, was found to have grown considerably: a *Pilchard* also throve well. All the above-mentioned fishes were placed in the lake, except perhaps the *Brill*; but others, as the *silver Bream*, appear to have introduced themselves. It is even suspected that hybrid fishes have been produced, as several have been caught which were unknown to persons well acquainted with the species usually met with on the coast of Guernsey. Mr. Arnold adds that Sea Fishes, after having been naturalized in his lake, have been transferred to ponds of spring water, where they have not only lived, but done well; and that such naturalized fishes have been carried to a long distance, being much more tenacious of life than those caught in the sea.

Numerous specimens of *Hylurgus Piniperda*, Latr., presented to the Society by Barlow Hoy, Esq., were exhibited, together with specimens of the shoots of *Pines* perforated by these insects. The mode in which the young branches are destroyed by these perforations has been illustrated by Mr. Lindley in Mr. Curtis's 'British Entomology'. Its effect was regarded by Linnæus as analogous to that of pruning.

The exhibition of the collection of *Fishes* formed at the Mauritius by Mr. Telfair, portions of which had been brought before the Committee at the Meetings in April, was resumed. From among them Mr. Bennett pointed out more particularly the following species which he believed to have been previously undescribed.

Serranus Delissii. *Serr. maxillis squamosis; lobis pinnæ caudalis elongatis, æqualibus; radio tertio pinnæ dorsalis producto: supernè stramineus, rubro cancellatim rivulatus, infernè lilacino-ruber; pinnis ventralibus aurantiaco-flavis.*

D. $\frac{10}{17}$. A. $\frac{3}{7}$.

Affinis, ut videtur, *Serr. Borbonio*, Cuv. et Val. Corpus altum, altitudo longitudinis (exclusâ pinnâ caudali) dimidium æquans. Pinnæ pectorales ventrales longitudine æquantes. Præoperculi angulus spinâ unicâ magnâ armatus.

SERRANUS MITIS. *Serr. maxillis alepidotis; radio ultimo pinnarum dorsalis analisque elongato: corpore elongato: argenteus, dorso obscurè flavo-brunneo; pinnis flavo tinctis; dorsali nigro tenuiter submarginatâ.*

D. $\frac{10}{11}$. A. $\frac{3}{8}$.

Serr. filamentoso, Cuv. et Val., longior: corpus, præsertim ad humeros, crassius: oculus major: vertex rugosus (in *Serr. filamentoso* granulosus tantum): dentes antici superiores conici utrinque quatuor debiliores (in *Serr. filamentoso* majores utrinque duo): color pallidior, flavescens.

SERRANUS TELFAIRII. *Serr. maxillis alepidotis; radio ultimo pinnæ dorsalis analisque elongatis: saturatè roseus, dorso latè citrino maculato, posticè albidus; lateribus argenteo vittatis, guttatimque conspersis; pinnâ dorsali anticè citrinâ, basi roseo-, apice niveo-maculatâ.*

D. $\frac{10}{11}$. A. $\frac{3}{8}$.

Affinis, ut videtur, *Serr. zonato*, Cuv. et Val., quem numero radiorum æquat, cujusque formam, etiam pinnarum, æmulat. Differt picturâ, et præsertim lateribus argenteo vittatis guttatisque.

The latter two species form an interesting addition to a section of the genus *Serranus* distinguished by the elongation of the last ray of both the dorsal and the anal fin. Two other species of this section have been described by MM. Cuvier and Valenciennes, to whom they have only very recently become known. Of one of these, *Serr. filamentosus*, as well as of the two new species above described, specimens are contained in the Mauritius collection.

DIACOPE ANGULUS. *Diac. stramineo-flavescens, infrà pallidior; vittis corporis utrinque septem lilacinis, superioribus obliquis, inferioribus longitudinalibus, 4tâ 5tâque anticè connexis angulum acutum postopercularem formantibus; pinnæ dorsalis parte molli supernè tenuiter nigro marginatâ.*

D. $\frac{11}{13}$. A. $\frac{3}{8}$.

Affinis, ut videtur, *Diac. duodecimlineatæ*, Cuv. et Val.: numerus radiorum idem, vittæque haud operculum signant. Dentes maxillæ superioris externi conici, distantes, subæquales, duo anteriores angulares solum majores; maxillæ inferioris minores, tres laterales medii utrinque majores.

DENTEX LYCOGENIS. *Dent. maxillis transversim dentato-cristatis: dentibus conicis anticis sex, maxillæ inferioris lateralibus majoribus: plumbeus, vittis dorsalibus plurimis argenteis, ventralibus distantibus fusco-flavis; maculâ elongatâ argenteo-albâ sub basi posticâ pinnæ dorsalis; pinnis ventralibus, pectoralibus, dorsali analique anticè rubris, caudali flavidâ.*

D. $\frac{10}{10}$. A. $\frac{3}{8}$.

DASCYLLUS UNICOLOR. *Dasc. corpore alto unicolore nigricante.*

D. $\frac{12}{15}$. A. $\frac{2}{14}$.

Forma *Dasc. marginati*, Cuv. et Val.

HELIASES AXILLARIS. *Hel. pallidè cæruleo-fuscus?; axillâ nigrâ; pinnis, præsertim caudali analique, cæruleo-nigrescentibus.*
D. $\frac{13}{14}$. A. $\frac{2}{11}$.

Affinis, ut videtur, *Hel. anali*, Cuv. et Val. Radius secundus pinnæ analis fortior, sequentes longitudine aliquantulum superans. Corpus ovatum.

JULIS CUVIERI. *Julis caudâ subquadratâ: pinnæ dorsalis radio primo longissimo (quam tertius triplo longiore): rufescenti-brunneus cæruleo punctulatus; capite virescente, vittis tribus latis rufis; pinnis dorsali analique luteis, sanguineo obliquè lineatis, nigro latè marginatis, cæruleoque fimbriatis; hujus fasciâ marginali lineâ cæruleâ longitudinali mediâ alterâque ad basin notatâ.*
D. $\frac{9}{12}$. A. $\frac{3}{12}$. P. 12. C. 13.

This new species of *Julis* is one of those fishes, now becoming numerous, which might be confounded with the *Julis Aygula*, (*Coris Aygula*, LaCép.). The latter appears to have hitherto rested solely on the figure and description preserved by Commerson, no specimen of it having been referred to as existing in collections. A specimen of that species has, however, recently been added to the Society's Museum from a collection of fishes formed in India, and agrees well with the figure published by LaCépède, in the truncation or even sublunation of its caudal fin, and in its general form; in its dried state its colour is uniformly dull blackish brown. This specimen was exhibited in illustration of the distinction between *Julis Cuvieri* and *Julis Aygula*, and also to show that the fish figured under the latter name by Dr. Rüppel differed in various particulars, especially in the rounded form of its caudal fin, from the species indicated by LaCépède. To M. Rüppel's fish, it was remarked, the name of *Julis Ruppelii* might properly be applied.

ANGUILLA MAURITIANA. *Ang. maxillâ superiore breviore, obtusâ; rostro complanato; pinnæ dorsalis initio pectoralibus quam anali propiore; lineâ laterali conspicuâ: dorso fusco pallidoque guttatim marmorato, lineolisque nigrescentibus intertextis notato; pinnis fusco nebulosis.*
P. 18?

Mr. Bennett availed himself of the opportunity afforded by the exhibition of the several species of *Pterois* contained in the Mauritius collection, to bring before the Committee a fish which he had formerly regarded as the *Pterois volitans*, under which name it was included in the catalogue of Sumatran fishes appended to the memoir of Sir T. Stamford Raffles. It formed part of the collection presented to the Society by its founder and first President. It was thus characterized:

PTEROIS RUSSELII. *Pter. genis spinosim latè lineato-serratis; osse infra-orbitali antico præoperculoque infernè spinosissimis: cirris parvis sex, nasali utrinque duobusque infra-opercularibus: pinnis pectoralibus caudalis basin attingentibus.*
D. $\frac{13}{11}$. A. $\frac{3}{8}$. P. 13.
Kodipungi. *Russel, Coromandel Fishes*, No. 133.

September 13, 1831.

W. Yarrell, Esq. in the Chair.

At the request of the Chairman the following notes of a dissection of the *Alligator Tortoise* (*Chelydra serpentina*, Schweig.) were read by Mr. Martin. They were illustrated by preparations of the stomach; of the *ilium* and *colon*; and of the *cloaca*, with the *penis* and urinary bladders: a drawing of the latter was also exhibited; and a drawing of the throat, representing the *œsophagus* and *trachea* in their natural positions.

"The animal was a male, and most probably young: its length from the nose to the *anus* being 1 foot 11 inches, and from the *anus* to the end of the tail 6 inches. The length of the *carapace* was 11½ inches, and its breadth, following the curve, 1 foot 1 inch.

"On the *plastron* being removed, and the *scapulæ* (which are united to it by intervening muscles) being turned back, the heart, inclosed in a peritoneal sac, was exposed; the *scapulæ* in their natural position extending over it like an arch: next, and in the same cavity, (for there was no division either by muscle or membrane,) the liver was seen, divided into two distinct portions, and stretching completely across from side to side: below the liver and occupying what may be called the pelvic portion of the cavity, lay the intestines, among which on the right side was seen the *colon* or commencement of the large intestines enfolding the spleen.

"The heart consisted of one ventricle and two auricles, the right of which was the largest. The figure of the auricles was rounded, each in magnitude equalled the ventricle: both auricles contained coagulated blood. The ventricle was in shape acuminate, of a red colour, and firm and fleshy in structure. Its *carneæ columnæ* were strong, distinct, and numerous, but did not separate it into cells or chambers.

"The liver consisted of two lobes. The right lobe was divided into two parts. On its inferior surface was situated the gall-bladder buried in its substance and containing dull green bile: the duct barely half an inch long. The edge of the left lobe of the liver covered the stomach, which passing under it fitted an elongated furrow in the thick part of the lobe, and was closely united to it by the *peritoneum*. The outer curvature of the stomach was placed in contact with the *parietes* of the *carapace*. The texture of the liver was soft and spongy, easily broken down, and pouring out an abundance of dark green fluid, with which it was saturated. The gall duct entered the *duodenum* 6 inches below the *pylorus*. The under surface of the liver on the right side was connected to the *duodenum*, and partially to the lung on the same side, by peritoneal attachments.

"On the liver being removed the course of the intestines was more fully exposed. Beginning with the *œsophagus*, which immediately on proceeding from the *pharynx* becomes firm and muscular (the fibres being longitudinal), we find it dipping down on the right side of the neck, keeping a straight course, passing under the right clavicle, then crossing below the great arch of the neck within the shell, and passing under the right laryngeal branch to the cardiac portion of the stomach; its length being 7 inches. The *cardium* passes over the left laryngeal branch. The length of the stomach is 7½ inches; the circumference of the thickest part 3 inches; gently narrowing to the *pylorus*. Its texture was firm and muscular, especially at the pyloric portion; and between the peritoneal and muscular coats numerous small white points were observed, which on being cut into were found to arise from the presence of minute worms, of three or four lines in length, coiled up under the *peritoneum*.

"The small intestines were strong and thick: their length 3 feet 11 inches. Their internal surface presented longitudinal *rugæ*. At their termination in the large intestines there appeared the rudiment of a *cæcum*.

"Encircled by a fold of the *colon* was situated the spleen, of a dark red colour, and soft spongy structure, almost round in shape, and of the size of a small egg: several tortuous veins proceeded from it, and the veins and arteries of the mesentery in general were of the same character.

"The length of the large intestines was 1 foot 7 inches; the muscular coat was particularly distinct; the villous smooth; and several black patches were observed on its surface, which exhibited great vascularity.

"The urinary bladder was double, or rather it might be said that there were two bladders, lying on opposite sides of the *rectum*, and adhering to the sides of the *pelvis*, each communicating by a distinct opening into the commencement of the *cloaca*. Their size and shape was that of a small pear: their texture very thin and fibrous, the fibres being irregularly disposed.

"The *penis*, 2½ inches long, lay concealed entirely within the *cloaca*. It was grooved along its upper surface with the furrow usual in the *Tortoises*, but instead of being free or disengaged, was attached by a close union throughout its whole length on the under side to the *cloaca*. The *glans* was acuminate, and full an inch from the *anus*. From this union of the *penis* to the *cloaca* it is difficult to conceive that it can ever be protruded externally, especially when its distance from the external orifice of the *cloaca* is considered. The duct of the right bladder, in length half an inch, was found to terminate just above the furrow of the *penis*, while that of the left opened an inch on one side of it.

"The *testes* were about the size of a pigeon's egg, elongated, of a bright ochre colour, and situated in the pelvic portion of the abdominal cavity, one on each side of the vertebral column; their structure was soft and somewhat granular. There were no suprarenal capsules. Beneath the *testes* lay the kidneys, large, irregular in figure, glandular in structure, consisting of brain-like reduplications, and dipping between the interstices of the three lowest ribs, (or rudiments of ribs,) on each side of the vertebral column.

"The palate was smooth, with slight transverse *rugæ;* the *pharynx* wide, simply membranous, and capable of great extension; the tongue a smooth cartilaginous point, at the base of which the *larynx* opened by a very small simple *rima.* There was no *epiglottis;* but around the *rima* a slight fold of the membrane was just perceptible. The *larynx* crossing before the *pharynx* dipped down on the left side of the neck, and passing under the left clavicle, divided into two great branches, at about a foot from the *rima:* the right branch passed before the *œsophagus,* and immediately entered the right lobe of the lungs; the left passed under the cardiac portion of the stomach to the left lobe.

"The lungs consisted of two large and equal lobes, distinct, flat, and dark red, extending from the upper edge of the *carapace* as far as the *pelvis,* but not as in the *Land Tortoises* (the *Indian* and *Greek,* for example) attached to the whole inner surface of the shell; their attachment was by one of their edges only to the vertebral column, and slightly to the liver. Their texture was firm, and their cells, though large, were not so irregular as in the *Testudo Græca.*

"Between the lungs passed two singular muscles, retractors of the head, long and slender, which arising one on each side by a tendinous origin from the base of the *cranium* passed on each side of the neck, and coming in contact below its great curve, ran together down the vertebral column, and were inserted into its sides in the spaces between the 6th and 7th and 7th and 8th ribs, each by two distinct fleshy terminations.

"The difference exhibited by this animal in the attachments and conformation of the lungs from the family of *Tortoises* in general indicates an approach, not merely in external configuration, but in internal structure, to the *Alligators.* Nor, although it must be confessed in a degree less striking, is this approach unevidenced by the structure of the urinary organs; the bladder in this species although double is yet small, while its enormous volume in the *Tortoises* in general is a singular feature in their construction: the diminution of volume in this organ seems to afford another indication, not to be overlooked, of an approach to the *Saurian Reptiles.*

"The posterior *nares* opened by two distinct orifices one quarter of an inch from the commencement of the palate and three quarters from the point of the beak: their course was obliquely upwards, and the length of each canal to the external orifice just 1 inch.

"The *os hyoides* consisted of an irregularly shaped body and four arched bones or processes united to it by cartilage; from the anterior part of the body a spinous process partly cartilaginous proceeded to support the rudiment of a tongue. The anterior pair of arched bones were connected to the base of the skull by muscles only; the second pair terminated in a broad and flat extremity, and were more abruptly curved: their use seems especially to support the *pharynx,* and they were not connected to the skull. The first pair were each 4 inches in length; the second little more than 3 inches. The rings of the *larynx* were perfect; the length of the laryngeal branches 3 inches."

September 27, 1831.

Dr. Marshall Hall in the Chair.

An extensive collection of skins of *Birds* from the northern regions of North America was exhibited. It was presented to the Society by Viscount Goderich, Secretary of State for Colonial Affairs, and comprehended specimens of all the rarer species obtained during the last Arctic land expedition under the command of Captain Sir John Franklin. Among the one hundred and ten species thus presented to the Society (nearly the whole of which were exhibited) the following are regarded by Dr. Richardson and Mr. Swainson as new to science:

14. + *Bubo arcticus.*
Lanius excubitorides.
* ——— *borealis.*
Tyrannula pusilla.
——— *Richardsonii.*
Cinclus Americanus.
Merula minor.
——— *solitaria.*
Orpheus meruloides.
Erythaca arctica.
* *Emberiza picta.*
* ——— *pallida.*
Pyrgita arctica.
* *Linaria tephrocotis.*
Garrulus brachyrhynchus.
Tetrao leucurus.
* *Scolopax Drummondii.*
Larus zonorhynchus.
* ——— *brachyrhynchus.*
——— *Franklinii.*
——— *Bonapartii.*
* *Lestris Richardsonii.*
* *Clangula Barrovii.*

The species to which an asterisk is prefixed were not exhibited, the specimens not having been yet transmitted to the Society.

The whole of the above-mentioned species are described by Dr. Richardson and Mr. Swainson in the forthcoming part of the 'Fauna Boreali-Americana.'

In addition to the *Birds*, specimens of several *Mammalia*, collected during the same expedition, and similarly presented to the Society, were exhibited. Among them was a skin of the *Lagomys Princeps*, Richardson.

Mr. Yarrell exhibited a preparation of part of the intestine of an *Eel*, which was perforated by numerous examples of the *Echinorhynchus tereticollis*, described by Rudolphi in his 'Synopsis Entozoorum' as one of the many species of intestinal worms infesting the fresh-water eel. Most of these worms had penetrated both the villous and muscular coats, and their globular heads were visible under the transparent peritoneal covering. A considerable number of a species of *Filaria* were also exhibited, which had recently been taken from the abdominal cavity of an Eel.

Mr. Yarrell stated his belief that the opinion of some writers that the Eel is viviparous (an opinion which has been often expressed but never proved), was probably founded on the frequent occurrence of *Filariæ* in the *abdomen* of these fishes; the *Filariæ* being those which of all the species of worms occurring in serous cavities most closely resemble the Eel in form. Mr. Yarrell was inclined to doubt that Eels are viviparous from several circumstances. The species are known to be most prolific: viviparous fishes, on the contrary, produce but few young at a time, and these are of considerable size when first excluded. In illustration of this latter fact, British specimens of the *viviparous Blenny* (*Zoarces viviparus*, Cuv.,) and of its young as expelled from the parent fish by pressure, were exhibited. In some *Eels* examined in September the *ova* in countless thousands were distinctly apparent under a lens of very moderate power, although these *ova* would not be matured till January: the sexual organ, moreover, of an *Eel* taken in February exhibited the appearances common to that part in female fishes that had recently deposited their *ova*. Mr. Yarrell stated that comparative examinations made at this time of the year upon the two most common species of *Eels* of our rivers and lakes, showed the sexual organs of the *sharp-nosed* sort (*Anguilla acutirostris*) to be in a much more forward state than those of the *broad-nosed Eels* (*Anguilla latirostris*). Skeletons of both species were exhibited, showing the most obvious differences in the size and character of the bones of the head and *vertebræ*; those of the *broad-nosed Eel* being nearly as large again as the same parts of the other species in examples of the same length.

By some authorities both *Eels* and *Lampreys* have been stated to be hermaphrodites.

Mr. Yarrell exhibited preparations of the two sexes distinct both in the *Lamprey* and *Lampern*, at the time they were about to deposit their *ova* and milt; and gave the following account of his investigation of this subject.

"The *common river Lampern* (*Petromyzon fluviatilis*, L.) was obtained and examined every week from March to the middle of May. Up to the 19th of April more females than males were taken; but after this period, the females being nearly ready to deposit their roe, the males were most numerous, in the proportion of two to one. All the females taken about the 26th of April were in a state to deposit their roe; and the milt of the males, now become fluid, passed in a stream from the sheath behind the anal aperture on making slight pressure upon the *abdomen*. By the 10th of May nearly the whole of those examined had deposited their spawn. The males were entirely void of any appearance of milt, and the females at this time might be mistaken for males that had not spawned. The gelatinous matrix of the *ova* appeared swollen and of large size; and close examination showed the ruptured membrane and extravasated blood produced by the separation of the *ova*, with here and there an occasional *ovum* still adhering. The kidneys (which have been mistaken for the male sexual organs) were not observed to undergo any alteration either in size or appearance during a long series of examinations. The males could be distinguished from the females externally by their larger respiratory apparatus and lips.

"Seven examples of the *Lamprey*, (*Petr. marinus*, L.,) were received on the 3rd of May from the Severn, about which time they ascend that river for the purpose of spawning. Of these seven, four were males and three females: the appearance of milt and *ova* being most distinct. The kidneys, lying in the cavity of the *abdomen*, were of equal size in both sexes, elongated and narrow in form, with the ureter running the whole length of the outer edge. The anal opening is situated anterior to a small sheath, which when slit up exposes four apertures, the two innermost of which lead to the ureters; the outer two open into the abdominal cavity.

"In the *Eels* no part of the kidneys is visible within the cavity of the *abdomen*, and the vent includes but four apertures,—the most anterior of which leads to the intestine; the posterior to the urinary bladder; and two elongated lateral openings into the cavity of the *abdomen*, as in other true bony fishes."

Specimens were exhibited of several *Fishes*, lately received from Dr. Bancroft of Kingston, Jamaica, Corr. Memb. Z. S. They were accompanied by a Letter from Dr. Bancroft, in which various details were given with respect to their distinctions from allied species: particular attention was also directed to the anatomical structure of the disc of the *Sucker-fishes*, (*Echeneis*, L.,) a new species of which genus formed part of the collection. This has the elongated form and general aspect of *Ech. Naucrates*, L., but is at once distinguished by the forked termination of its caudal fin. It may be thus characterized:

ECHENEIS LUNATA. *Ech. corpore elongato, squamoso; disci striis 22—25; pinnâ caudali lunatâ; pectoralibus acutis.*

D. 30. vel 32. A. 30. vel 33. C. 16. P. 21. V. 6.

Long. circa 3-ped.

Its colour is described as a full black on the upper and anterior portion of the back, and dark grey over the rest of the body, with a lighter grey stripe from near the eye to near the vent: all the fins are of a dark grey, passing into black at the anterior and outer portions: the lateral line consists of very small black points: and the iris is of a pure white. The dorsal fin is sometimes destroyed in the middle, and is thus made to appear like two distinct fins.

A specimen of a *Cephalopterus*, Dum., included in the collection, is regarded by Dr. Bancroft as the type of a new species, amply distinguished from the *Cephalopterus Manta* described by him in the 'Zoological Journal' by the form of the anterior margin of its pectoral fins; the position of its mouth on the ventral surface; and the rounded form of its *spiracula*, which are not on the dorsal surface (as in the *Rays* generally), but are situated in a groove immediately under the anterior edge of the base of the pectoral fin. It may be thus characterized:

CEPHALOPTERUS HYPOSTOMUS. *Ceph. lævis; ore infero; pinnarum pectoralium margine antico delivi recto; spiraculis in fossâ sub basin anticam pinnarum pectoralium sitis.*

The entire length of the specimen from the *apex* of the frontal flappers to that of the ventral fins is 17 inches: that of the tail 21: extreme breadth of body 28. These dimensions were respectively 32, 27, and 44 inches in another individual formerly examined by Dr. Bancroft, which he considered to be adult.

A third species is the common *Sea-Eel* or *Conger* of Jamaica. It is perhaps identical with the *Savanne* of Martinique (*Muræna Savanna*, Cuv.), a fish of which no distinguishing mark has yet been published, except that derived from the forward position of the commencement of its dorsal fin. Its teeth are peculiar. Its characters may be thus expressed:

Conger Savanna? *Cong. pinnâ dorsali ante basin pinnarum pectoralium incipiente: dentibus anterioribus conicis; lateralibus pluri-serialis, seriei mediæ majoribus, parallelopipedis, cuneatis, serierum externarum internarumque minoribus granulatis rotundatisque, omnibus confertis; vomerinis mediis majoribus triangularibus, subrecurvis, compressis, lateralibus rotundato-granulatis.*

A specimen was exhibited of a species of *Phalangista*, Geoff., which had been lately presented to the Society's Museum by —— Talbot, Esq. Mr. Ogilby stated that he regarded it as forming a new species, to which he gave the name of *Phal. xanthopus.* He also called the attention of the Committee to a second undescribed species of the same genus, which is now living in the Society's Gardens.

Mr. Ogilby characterized and described these two animals as follows:

Phalangista fuliginosa. *Phal. vellere subcrispo, suprà et subtùs fusco-fuliginoso; caudâ longâ, villosâ, dorso concolore.*

The size and proportions are those of the *Phal. vulpina;* the ears are also of similar shape and size, hairy on the outsides, but naked within. The colour is a uniform dark sooty-brown over all parts of the head and body, not even excepting the belly and inner surface of the thighs. The hair has a frizzled appearance, but is not so close nor so fine as in *Phal. vulpina.* The tail is long, black, and rather bushy; the naked slip underneath, as well as the nose and soles of the feet, which are also naked, is of a bright flesh colour. The moustaches are long, stiff, and black.

Described from a specimen at present living in the Society's Gardens, and said to have been brought from Sydney.

Phalangista xanthopus. *Phal. vellere densissimo, suprà cano-fusco, infrà canescente; pedibus fulvis; caudâ villosâ, radice dorso concolore, apice albâ.*

The upper parts of the body are of a blueish ash colour, with a dash of black, which prevails chiefly about the head and eyes; the under parts yellowish-white. The base of the ears is of the same colour as the upper parts of the body, but their tips are white, as in the *Phal. vulpina.* The tail is ash-coloured at the root, dark brown in the middle, and pure white on the last two inches. The limbs on their external surfaces are of the same colour as the body, but the feet are of a dun-yellow.

This species resembles the *Phal. Cookii* in having the tail marked with white; but in all other respects it is most closely allied to the *Phal. vulpina*. Its size, proportions, and general appearance, correspond with those of the latter species; and the ears in particular are long and elliptical, whilst they are short and semicircular in the *Phal. Cookii*. The tail also is comparatively much shorter than in that animal, and instead of being covered with very short close hair is rough and bushy, as in the *Phal. vulpina* and *Phal. fuliginosa*.

Described from a specimen in the Society's Museum.

Mr. Ogilby availed himself of the same opportunity to describe a new species of Indian *Deer*, belonging to the section of which the *Axis*, (*Cervus Axis*, Linn.,) may be regarded as the type. He thus characterized and described it:

CERVUS NUDIPALPEBRA. *Cerv. corpore toto sub-nigro, lucido-maculato; cornibus trifurcis; palpebris regionibusque ocularibus nudis, nigris.*

About the size of a *Fallow-deer*, but of a more corpulent form; of a uniform dark brown colour, almost black, particularly on the head, neck, and median line of the back; even about the tail not a single white hair is to be seen, nor on the belly, nor inside of the thighs. The body is obscurely spotted with white, which is only apparent on attentive examination, and in particular lights. The hair is rude and coarse, longer on the body than on the head, neck and extremities, which are jet black, and without spots. The horns are very long, and bear only two antlers, one near the brow, and the other about-two thirds of the length of the shaft from its root. The muzzle is large, black, and naked; the tear-pits particularly apparent; the eyes large and prominent, and the ears broad, and shaped like those of the *Ox*. The eye-lashes and a considerable circular space about each eye are naked and black.

It inhabits the banks of the Ganges.

Described from a specimen at the Tower.

October, 11, 1831.

Joseph Cox Cox, Esq. in the Chair.

At the request of the Chairman Mr. Martin read the following notes of some particulars observed on the dissection of a *Monitor*, which died a short time since at the Society's Gardens. They were illustrated by a drawing, in which was represented the distribution of the principal blood-vessels.

"Proceeding from the ventricle by a trunk which appears single, but which in reality is divided internally, five arteries are seen, which may be characterized as two *aortæ*, two pulmonary, and one cervical.

"The cervical runs between, and somewhat anterior to, the two *aortæ*, and, continuing single for upwards of three inches, divides into two branches at the root of the neck, under the arch formed by the *scapulæ;* these two branches pass along on each side of the neck, a short distance from the *œsophagus*.

"The right *aorta* proceeds upwards for about an inch and a half, and then suddenly turns round the right bronchial tube of the *larynx*, as that tube is about to enter the lungs by two subdivisions, the superior of which is reflected up like a hook, to link with the artery turning round it, the inferior passing downwards. Having made this turn the artery proceeds downwards, but at half an inch from its turn sends off a branch at a singularly acute angle, which runs upwards just under the main cervical artery for about an inch, and then divides into two, which running obliquely upwards pass one on each side under the bronchial tubes, and then over the first rib to the *humerus;* these are the subclavian arteries. It is to be observed that before passing over the ribs they send off an artery to the under surface of the *scapulæ* and muscles of the neck. The right *aorta* having thus given off the subclavian, passes down behind the heart, and just below this organ anastomoses with the left *aorta*, which arising on the left of the cervical branch from the common stem, turns over the bronchial division on the left, exactly as happens on the right side, only a little higher up, runs down behind the heart, and after its *anastomosis* ends in two large branches, which take their course along the mesentery; so that it may be considered as analogous to the mesenteric arteries. The true or right *aorta*, taking a straight course onwards to the tail, gives off two branches just below the *anastomosis*, one of which is the splenic, the other is small, and goes to the mesentery; considerably lower another small mesenteric artery is also given off.

"The pulmonary arteries arise one on each side from the common stem, and taking a short course upwards enter the lungs, subdividing into several branches.

"The blood from the upper parts of the body is brought to the auricle by two large veins. The blood from the lower parts and *viscera* is brought by a large vein or *vena portæ* into the liver, from which organ a *sinus* emerges, of considerable circumference, and half an inch long, which enters, or rather seems to form a part of, the right auricle.

"The *trachea* is long, and divides at six inches from the *rima* into two branches, as already noticed, which are about an inch and a half long, and are again subdivided; round the upper of which subdivisions, as has been stated above, the *aortæ* are turned. The rings of the *trachea* are entire; the *rima* small and simple.

"The *œsophagus* is wide and membranous. The stomach is firm and muscular: its circumference does not much exceed that of the intestines, and its increase at the cardiac, and diminution at the pyloric portion is gradual. The intestines are, as in all these animals, very firm. The spleen is small, dark-coloured, and oval.

"The liver is large, and consists of two lobes, in the right of which, on its under surface, the gall-bladder lies deeply imbedded.

"The lungs consist of two lobes, extending along the cavity of the chest, and attached to its dorsal aspect. They are composed of an aggregation of minute delicate membranous cells.

"The chest is divided from the *abdomen* by a partial membranous diaphragm attached to the *parietes* of the *abdomen* by numerous strings or filaments.

"As compared with that of the chest, the cavity of the *abdomen* is very small; the former occupying fully two-thirds of the length of the body.

"The liver lies in the abdominal cavity, and just below the diaphragm; and through this, covered by a reflexion of it, passes the *sinus* emerging from the liver to the auricle.

"The individual examined was a female, and the ovaries were seen following two veins along the mesentery for the length of nearly two inches."

October 25, 1831.

Joseph Cox Cox, Esq. in the Chair.

Mr. Owen read a portion of his notes on the anatomy of a *Crocodile* (*Croc. acutus*, Cuv.), made during the dissection of a young individual which had lately died at the gardens of the Society.

Before speaking of the internal anatomy, he alluded to the peculiar structure of the tongue and *fauces*, which he described as essentially agreeing with that of the same parts in the *Egyptian Crocodile*. He explained the uses of the apparent closure of the *fauces*, in which, on looking into the mouth, no orifice or passage for the food is perceptible; and remarked on the necessity for so complete a safeguard of the *larynx* in an animal breathing air, but destroying its living prey by submersion in water.

He then proceeded to the description of the *viscera*, and commenced by remarking on the singular disposition of the serous membranes of the body in the *Crocodiles*; a disposition which he has observed in no other animal, and which is such as to resemble the effects of a general inflammatory action. It is, however, normal, and has been observed by him in three individuals of the *Crocodilus Lucius* and *Croc. acutus*.

"The serous membrane analogous to *peritoneum* is reflected from the abdominal *parietes* upon the under surface of the stomach, to the right of which it partially surrounds the gall-bladder, and is continued upon the inferior surface of the right lobe of the liver; from these parts it descends, enveloping the spleen and covering the anterior part of the kidneys and *testes*, and being continued from the middle line of the *abdomen*, surrounds the intestines in the usual manner, forming a rather loose mesentery: thus the *abdomen* appears to contain only the intestines, gall-bladder, spleen, kidneys, and genital glands. The serous membrane which covers the upper surface of the stomach is reflected upon the under surface of the left lobe of the liver, and forms a distinct cavity confined to these parts. Along the line of the stomach, where the superior and inferior serous membranes are contiguous, a quantity of fat is interposed, together with the principal vessels of the stomach, analogous to the *omentum*. The serous membranes analogous to the *pleuræ*, after lining the sides of the chest, entirely surround the lungs, and are reflected on each side upon the superior and lateral aspects of the liver, a process dipping down between the lung and the liver, but forming only a partial *septum*, and terminating in a concave edge towards the back. On each side of the *pericardium* there is also a distinct serous membrane, which is reflected from the lower part of that bag upon the mesial aspect of the liver: so that, including the *pericardium* itself, there are no less than seven distinct serous membranes in the trunk of the *Cro-*

codile; and of these, one has the additional peculiarity of being continuous with the common integument.

"The only part of the intestinal canal that presented anything worthy of notice, in addition to previous descriptions, was the stomach. This *viscus,* from its shining lateral tendons and muscular structure, has generally been considered as a gizzard; but the propriety of this denomination has been questioned by M. Geoffroy-Saint-Hilaire, on the ground of its wanting a cuticular lining. In this individual, however, the interior of the stomach presented two smooth round patches about the size of a crown-piece, situated on opposite sides of the cavity; they were not, indeed, detachable as a membrane distinct from the villous coat, and appeared to differ only in having a smoother surface: this appearance, however, adds to the analogy that this *viscus* bears to the gizzards of birds. Another circumstance in favour of this analogy is the fact of pebbles being commonly found in the stomach. M. Geoffroy-Saint-Hilaire met with them in the *Egyptian Crocodile,* and observed that they were rendered smooth by the action of triturating the alimentary substances. In the present instance, there were five small pebbles in the stomach, the largest of which was about 8 lines in the longest diameter.

"The valve at the orifice by which the small pyloric cavity communicates with the *duodenum* appears rather to oppose the passage of matter into that intestine; and both orifices are remarkably small as compared with the size of the stomach, and especially with the size of the cardiac aperture: the diameter of each did not exceed 3 lines.

"The *duodenum* formed the same double fold as described by M. Geoffroy-Saint-Hilaire in the Egyptian species. As he makes no mention of a *pancreas,* but describes the outer spaces of this part as occupied only by fat, I was induced to examine it minutely, and discovered the gland between the first and last portions of the gut; and having laid open the duct, an eye-probe passed readily through it into the upper end of the last portion of the *duodenum,* a quarter of an inch beyond the orifice of the biliary duct.

"The rest of the small intestines varied only in diameter where *flatus* had accumulated, and at these parts the zigzag *rugæ* were almost obliterated. Mr. Hunter has remarked in his Anatomy of Whales (Phil. Trans. lxxvii. p. 410), that he has 'never found any air in the intestines of this tribe: nor indeed in any of the aquatic animals.' But this remark does not appear to apply to those animals whose habits are only partially aquatic.

"The *rectum* opens directly into the genito-urinary cavity, and does not pass beyond it, as in *Tortoises,* to terminate in the outer cavity or vestibule (*vestibulum commune,* Geoff.) The termination in this instance was denoted by a valve not circular, but rather spirally disposed; and the character of the lining membrane of the genito-urinary cavity was very distinct from that of the *rectum,* being more coarsely villous, and of a redder colour: this cavity was an inch in length; the ureters opened at the lower part, just above or within the valve that separates it from the outer cavity. The lower or ventral margin of the valve is grooved, and the groove is continued on into that of the *penis*.

"The peritoneal canals opened externally on two small *papillæ* placed one on either side the root of the *penis*; they also communicated at about a line distant from their external aperture, with the cavernous structure of the *penis*. From the minute size of these orifices, which barely allow of the passage of an eye-probe, and their disposition on a *papilla*, equivalent to a valvular structure on pressure from without, it is difficult to imagine that any water can be admitted from without into the peritoneal cavity; yet M. Geoffroy-Saint-Hilaire hazards the hypothesis that water is so admitted by means of a similar mechanism to that by which air passes through the *trachea* into the pulmonary cavity, the *peritoneum* being thus rendered an accessory organ of respiration. 'Le voilà,' he says, (speaking of the *Crocodile*, in his 'Déscription des Reptiles de l'Égypte,' page 237,) 'veritable amphibie, dans ce sens qu'il est animal aérien par sa poitrine et animal aquatique par une modification de l'état de son abdomen.' Yet, notwithstanding the opportunities this author enjoyed of examining the *Crocodile* under circumstances most favourable for such an observation, he does not appear to have ever detected water in the abdominal cavity; nor any peculiarity in the contents of that cavity, which would give support to his hypothesis.

"The appearances in this dissection precisely accorded with the description given by M. Geoffroy-Saint-Hilaire of the diaphragm and its connection with the liver in the *Egyptian Crocodile.*

"The spleen lies on the right side of the *abdomen*, beneath the right lobe of the liver; it was two inches and a half in length, and about half an inch across at the broader part. It is entirely surrounded by *peritoneum*, and lies very loose, being connected only by a very small process of that membrane accompanying the vessels to the upper part of the duodenal fold. It is here, therefore, that the structure most favourable for the detection of an excretory duct obtains, if the spleen really possessed such an appendage, its passage from the gland, in that case, being limited to a very small space, and this space circumscribed by a diaphanous membrane. But it was easy to see that this membrane contained only a small artery derived from the branch that supplied the *pancreas*, (having none analogous to the *vasa brevia* in man); a vein of disproportionate size, which terminated in the *vena portæ*; two small nervous filaments; and a delicate connecting tissue.

"There is a lacteal gland at the root of the mesentery as large as the spleen."

Mr. Owen stated his intention of bringing before the Committee at an early meeting the remaining portion of his notes on this subject.

Mr. Owen also read to the Meeting the following Notes on the Anatomy of the *Nine-banded Armadillo*, (*Dasypus Peba*, Desm.)

"This animal was the female specimen lately presented to the Society, which died almost immediately after its arrival. Its admeasurements were as follows:

	ft.	in.	lines.
From the end of the nose to the setting on of the tail	1	1	0
From ditto to the *vertex*		4	0
From the *vertex* to the first band		4	0
From the last band to the skirt of the armour		3	10
Breadth of the head across the eyes		1	6

The ears were contracted and tubular at the base, but the rest of the conch expanded, with the *apex* rounded; their length 1 inch 10 lines; their extreme breadth 10 lines. The openings of the eyelids were 3 lines in length, and oblique from behind upwards and forwards; their margins tumid, and the *ciliæ* chiefly on the lower eyelid towards the nose. The *membrana nictitans* could be drawn over the nasal half of the *cornea*. The globe of the eye was about the size of a peppercorn, the *cornea* occupying almost the whole of the anterior half. The pupil was dilated and round. The anterior extremities being formed for digging, the animal has strong clavicles, which are concave anteriorly. There were four small nipples, two in the pectoral and two in the inguinal regions: the number of young produced at the Gardens of the Society by the *Weasel-headed* species, (*Dasypus* 6-*cinctus*, Linn.,) have not exceeded two.

"The contents of the *abdomen* were partly concealed by a thin *epiploon* devoid of fat, as indeed was the case with all the *viscera*. The *œsophagus* runs an inch below the diaphragm before it terminates. The stomach is almost of a globular form; but suddenly contracted in its dimensions for about an inch at the pyloric end. The *œsophagus* enters at the distance of an inch and a half from the left extremity, the cuticular lining terminating at the *cardia*. The villous membrane presented two distinct appearances, two-thirds of the cavity at the cardiac end being lined by a membrane of a redder colour with coarser *villi*, and elevated into a few solitary but well defined *rugæ*; while the rest of the cavity was lined by a smoother membrane, only puckered near the *pylorus*. There was a slight contraction between these parts, which disappeared on distending the stomach; it is probably increased during the digestive process so as to produce a greater degree of separation between the two parts of the cavity, for the pyloric end is evidently adapted for powerfully triturating the alimentary matter, and the *pylorus* is provided with a valvular apparatus to prevent the propulsion of the contents of the stomach, until they have undergone the necessary comminution. The muscular coat is here thrice the thickness of any other part of the cavity; and the exterior of the stomach has at this part a tendinous appearance on each side. A semilunar ridge defines the lower part of the pyloric aperture, and above this ridge there is a protuberance about the size of a hazel-nut, upon which the villous membrane is puckered; this protuberance is equally obvious externally. It is not glandular, but is chiefly occasioned by an accumulation of condensed cellular membrane between the muscular and mucous membranes. A precisely similar structure guards the pyloric aperture of the stomach of the *Seal* and that of the *Llama*. From the position of this projection with respect to the semilunar fold below, the *pylorus* has the form of a semicircular aperture with the concavity upwards. This valvular structure is not alluded to by Sir Edward Home in his description of the stomach of the *Nine-banded Armadillo*, but he describes a zone of glands surrounding the orifice of the *pylorus*.

"The *duodenum* is enlarged at its commencement, and is connected by a loose process of *peritoneum*, which becomes narrower as the gut descends, and is continued from its lowest part upon the right kidney; the *duodenum* then crosses the spine and becomes a loose intestine. The small intestines contained a little dark-coloured matter; they were smooth on the inside: their whole length was 18 feet. They enter the *colon* in the same way as in the *Crocodile*: that gut suddenly expanding. There is a small circular production of the inner membrane, where the small intestine is inserted, but it seems incapable of forming an effectual valve. The inner membrane of the *colon* was raised into a few small longitudinal *rugæ*. The *fæces* were of an oval form, about 9 lines in length, and tolerably coherent. Two follicles open exteriorly near the verge of the *anus*.

"The liver is divided into four lobes and a *lobulus Spigelii*. The third from the right is the largest, and in this are lodged the gall-bladder, and the remains of the umbilical chord. The *ductus choledochus* enters the *duodenum* two inches from the *pylorus*. The *pancreas* is a thick mass, 4 inches in length, and extended as usual behind the stomach from the spleen to the *duodenum*. The spleen is a simple elongated trihedral body, 2½ inches in length.

"The kidneys are conglobate and simple, *i. e.* terminating in a single *papilla*. The supra-renal glands are half an inch in length, of a yellow colour, loosely connected with the kidneys, but closely attached to the coats of the contiguous large veins.

"In the heart the right ventricle terminated one third from the *apex*, and stood out from the left like an appendage to it; an appearance, however, that was chiefly owing to its being distended with blood, while the other cavity was contracted. The arteries are given off from the arch of the *aorta*, precisely as in the human subject. The lungs also have a similar correspondence in the number and proportions of their lobes.

"The tongue is of a trihedral elongated form; it is half an inch broad at the root, and from thence gradually tapers to the extremity: its superior surface is convex, transversely wrinkled and finely papillose; at about an inch from the root are two fossulate *papillæ* on the same transverse line, and behind these a mesial furrow extending to the *epiglottis*. There is a fold of membrane on each side of the *frænum linguæ*, which is continued forwards to the *symphysis menti*; and external to these folds are twenty filamentary processes, ten on each side, about 2 lines in length, which appear to be elongated follicles. The soft palate extends to the base of the tongue; on its anterior surface are two little cavities containing the tonsils.

" There is a peculiar structure connected with the salivary system, which appears to have been hitherto unnoticed in this or any other mammiferous animal. The secretion of the submaxillary gland, a gland of very large size, is received prior to its expulsion into a sac, in which it becomes very tenacious; the sac is about the size of a french-bean, and receives the *saliva* by four or five short ducts entering at its posterior part and having valves at their orifices, by which a retrograde course of fluids is prevented from the sac to the gland. A long duct is continued from the anterior extremity of the sac, and terminates by a minute orifice immediately behind the *symphysis menti.*

" The *epiglottis* rises behind the soft palate into the posterior *nares*, nor does the structure appear to admit of its ever passing beneath that part; it is deeply notched at the *apex*. The muscular *parietes* of the *pharynx* and *œsophagus* are very thick, for from the nature of the teeth, small, conical and wide apart, the food can undergo but little comminution in the mouth, and hence the necessity of additional power for propelling imperfectly divided substances into the stomach, and of a structure analogous to the gizzards of birds for completing their trituration in that cavity. The rings of the *trachea* overlap each other behind, but do not coalesce: they are irregular in their size.

" The thyroid glands are of the size of french-beans, and united by a very thin transverse band, like a connecting vessel.

" No morbid appearances were met with in either of the preceding dissections."

November 8, 1831.

William Yarrell, Esq. in the Chair.

An extract of a letter from Captain Fayrer, Corr. Memb. Z.S., was read. It was dated on board H. M.'s Packet Arrow, Port Patrick, October 23, 1831, and referred to the migrations of certain birds from that neighbourhood. That of the *Larks* commenced about Oct. 12. "Their numbers," says Captain Fayrer, "are beyond anything I would venture to state, but millions. They start at daylight, steer directly across to the Capelona Islands off Belfast Loch; and seem to prefer the wind directly against them. Very large flocks of *Starlings* have arrived within the last few days: they start before sun-rise, but steer to the southward. The *Lapwings* have also arrived: but these birds do not take their flight till day has set well in: they appear to go directly across. I see all these birds at each end of their passage (21 miles), and few, I think, perish."

A letter was read from E. W. A. Drummond Hay, Esq. H. M.'s Consul for Marocco, dated Tangier, Oct. 6, 1831. It accompanied a present to the Society from that gentleman, consisting of two *Ichneumons*, (*Herpestes Pharaonis*, Desm.,) and a pair of striped *Barbary Mice*, (*Mus Barbarus*, Linn.) The former were caught in the neighbourhood of Tangier, where they are called by the natives, in the dialect of the Arabic used there, *Sĕrro*. The *Mice* are not rare: the name given to them by the natives is *Phār-Azēff*, the *Palmetto Mouse*.

Mr. Drummond Hay also referred to four *Ostriches* sent in the same transport as a present to His Majesty from the Sultan of Marocco, which have since been graciously presented by His Majesty to the Society. They were obtained in a region of the Desert called Hămādah, situated about eight or ten days journey from Tafileht in the direction to which the Moosselmin address their prayers. Though yet so young as not to have assumed their adult plumage, (no external distinction being at present observable in them,) two of them were seen in the act of treading while they remained at Tangier.—The same precocity, it may be remarked, has been previously noticed in other birds.

The letter concludes by promising a continuance of Mr. Drummond Hay's exertions on behalf of the Society, and by referring particularly to his endeavours and those of Mr. Willshire, H. M.'s Consul at Mogadore, to procure skins and living specimens of several interesting *Mammalia* and Birds, and especially the quadruped known to the Arabs as the *Mhŏrr*.

A collection of *Fishes* was exhibited, consisting of nearly thirty species. It was presented to the Society by Captain Belcher, R.N., by whom it was formed during his recent survey of part of the Atlantic coast of Northern Africa. The following apparently new species contained in it were pointed out by Mr. Bennett.

POLYNEMUS ARTEDII. *Pol. digitis quinque corpore longioribus; pinnâ anali elongatâ: pinnis dorsalibus, caudali, pectoralique nigro-irroratis.*

D. 7, $\frac{1}{16}$. P. 15. A. $\frac{2}{25}$.

Pol. quinquarius? *Linn.*—*Seba, Thes. tom.* iii. *pl.* xxvii. *f.* 2.

Longitudo corporis, $6\frac{1}{2}$; pinnæ caudalis, $2\frac{1}{4}$; digitorum 3tii 4tique, 16; latitudo corporis $1\frac{3}{4}$ unc.

Except in the elevation and triangular form of the first dorsal fin, in which it agrees with the other *Polynemi*, this species differs in no respect from the fish figured by Seba, and described by Artedi in the text of the 'Thesaurus' under the name of *Pentanemus*. On this Linnæus established his *Pol. quinquarius*. MM. Cuvier and Valenciennes have recently united the latter with *Pol. paradisæus*, Linn., to form their *Pol. longifilis*: a union to which they were induced by a belief that *Pol. quinquarius* was founded on a mutilated specimen, in which two of the free rays on each side had been removed,—their extensive inquiries having failed in procuring for them any *Polynemus* possessing free rays exceeding the body in length and only five in number. There is, however, another marked distinction in Seba's figure in the length of the anal fin, which is nearly twice that usual in the genus, containing almost double the usual number of rays. In this respect and in the number and length of the free rays beneath the pectoral fin, *Pol. Artedii* agrees with the figure and description of *Pol. quinquarius*, with which, but for the difference in the form of the first dorsal fin, it must have been regarded as specifically identical. Its distinction from the other known species is easy, on account of the very remarkable characters just noticed.

Fam. SCOMBRIDÆ.

Genus APOLECTUS.

Corpus elongatum, subalepidotum.

Linea lateralis æqualiter squamata.

Pinnæ dorsales approximatæ, subcontinuæ.

Dentes maxillares fortes, conici, distantes.

Genus *Cybio*, Cuv., maximè affine: vix differt nisi dentibus conicis dissitis.

Adjungendus videtur *Scomber maculatus*, Mitchill, Trans. New York, vol. i. p. 248. pl. vi. f. 8.

APOLECTUS IMMUNIS. *Ap. immaculatus, suprà pallidè cœruleus, ad latera et infrà argenteus; pinnâ dorsali priore anticè atrâ.*

D. 18, 24 (8 spur.). A. 23 (8 spur.). P. 19.

NOMEUS MACULOSUS. *Nom. argenteus, dorso latè, lateribus, pinnisque nigro maculatis: pinnis ventralibus nigris.*

D. 10, 28. A. 27. P. 20. V. $\frac{1}{5}$. C. 19.

Picturâ abundè differt a figurâ *Scombri maculati*, Mitch., qui, monente cl. Cuvierio, idem ac *Nomeus Mauritii*, Cuv., (*Gobius Gronovii*, Gmel.).

EXOCŒTUS PINNATIBARBATUS. *Exoc. pinnis pectoralibus analem, ventralibus caudalem attingentibus; dorsali altâ (depressâ cauda-*

lis medium attingente); *cirro lato mentali profundè* 15—20 *radiatim secto.*

D. 13. A. 10. P. 13.

Affinis, ut videtur, *Exocœto Nuttallii*, Mitch., formâ et proportione pinnarum. Differt cirro mentali unico, multi-secto, numeroque radiorum pinnarum. Specimen 2-unciale. Pinnæ ventralis dorsalisque ultra medium nigræ; pectorales nigro fasciatæ.

ALOSA SENEGALENSIS. *Al. maxillis edentulis; pinnâ anali parum elevatâ: suprà chalybea, infrà et ad latera alba argenteo vittatim varians.*

D. 16. A. 20. V. 9. P. 19.

Clupeâ Fintâ, Cuv., latior: latitudo altitudinis dimidium æquat; altitudo minor est longitudinis parte quartâ.

Fam. PLEURONECTIDÆ.

Genus PSETTODES.

Os æquilaterale.

Dentes maxillares prælongi, distantes: *palatini* breves, acuti, uniseriati: *vomerini* pauci, acuti, parvi: *pharyngei, linguales, branchiales*que numerosi, conferti, setaceo-acuti.

Pinnæ pectorales æquales.

Pinna dorsalis longè ponè oculum incipiens.

Oculus superior subverticalis.

Nares utrinque positi.

Genus *Pleuronectidarum* adhuc cognitarum maximè aberrans. *Hippoglosso*, Cuv., affine, sed differt dentibus, situ oculi superioris, initioque pinnæ dorsalis.

Adjungenda videntur *Nooree Nalaka*, Russel, Coromandel Fishes, lxxvii, et *Pleuronectes Erumei*, Schn. *Adelah*, Russel, Ibid. lxix.

PSETTODES BELCHERI. *Psett. oblongus: latere sinistro nigrescenti, dextro albido; pinnarum pectoralium brevium rotundatarum sinistro pinnâque caudali quadratâ in medio subproductiore nigro guttatis: dentibus maxillaribus semi-sagittatis: lineâ laterali declivi.*

RHOMBUS HETEROPHTHALMUS. *Rhomb. latè ovalis, anticè supernè gibbus; oculis maximè distantibus, superiore prope gibbum posito, interstitio subplano paullum excavato; maxillâ orbitâque inferiore 1-spinosis; pinnâ caudali rotundato-lanceolatâ; pinnarum pectoralium radiorum extremitatibus vix liberis: latere sinistro fusco, ocellis numerosis notato.*

Affinis, ut videtur, *Rhombo manco*, Cuv., (*Pleuronectes mancus*, Brouss.): differt gibbo capitis et radiis pinnarum pectoralium membranâ per totam longitudinem connexis.

SOLEA HEXOPHTHALMA. *Sol. oblongo-ovalis; pinnis dorsali analique a caudali discretis: suprà pallidè brunnea, fasciis latis saturatioribus pallidiori rivulatis septem, quarum 4tâ 5tâ et 6tâ oculo magno nigro iride albâ prope pinnam dorsalem alterâque prope pinnam analem notatis; pinnis dorsali analique nigrescentibus, pectorali nigrâ, caudali brunneâ nigro-punctatâ; infrà pinnâque pectorali rubescenti-albidâ.*

SOLEA IMPAR. *Sol. elongata, dorso semi-ovali, ventre subrecto;*

pinnis dorsali analique a caudali discretis: latere dextro flavescente, fuscescente vario; pinnâ pectorali dextrâ ad apicem maculâ parvâ nigrâ notatâ.

TETRODON GUTTIFER. *Tetr. oblongus, lævis; ventre aculeato-hispido; pinnis pectoralibus posticè subrotundatis; dorsali analique rotundato-acutis; caudali lunatâ; dentibus superioribus anticè parum elevatis: suprà olivaceo-brunneus albo guttatus; infrà lacteus.*

D. 11. A. 10. P. 21.

CARCHARIAS FISSIDENS. *Carch. dentibus triangularibus, singulis versus angulum oris profundè emarginatis, incisurâ acutâ; pinnâ dorsali 2dâ supra analis medium incipiente.*

Figura dentium apud *La Cépède, Hist. Nat. des Poiss., tom.* i. *pl.* viii. *f.* 2.

The single notch on each tooth on the side directed towards the angle of the mouth is so deep and acute as to give to the teeth, when viewed from the side, a close resemblance to so many arrow-heads.

RAIA BISPECULARIS. *Raia supernè aspera, aculeis dorsalibus in unicâ serie per caudam excurrente: fusca, maculâ pinnæ pectoralis rotundâ hyalinâ nigro-cinctâ.*

Affinis, ut videtur, *Raiæ Miralete,* Risso: differt corpore toto supernè aspero, caudæque aculeis uni-seriatis. Specimen minimum, 2-unciale.

Among the previously described species contained in the collection was a specimen of *Scyllium marmoratum,* Benn., (Memoirs of Sir T. Stamford Raffles, Appendix) hitherto only known as an inhabitant of the Indian seas.

November 22, 1831.

Dr. Horsfield in the Chair.

A letter from Sir R. Ker Porter, Corr. Memb. Z.S., dated City of Caracas, Sept. 10, 1831, was read. It contained a detailed description of the *Myrmecophaga jubata*, Linn., under the name of *Orso Hormeguero* or *Ant-Bear*, together with an account of the habits of that animal; and was accompanied by a drawing of the fully grown individual from which the description was taken. Sir R. Ker Porter was particularly struck with the difference in structure which exists between the fore and the hinder feet, and with the curious disposition of the parts of the former in the act of progression, which has been slightly referred to by D'Azara. In the figure (in which the animal is represented in a standing position) the claws of the fore feet do not project in front, but are doubled backwards under the wrist; evidencing a mode of progression in the *Myrmecophagæ* similar to that recently described by Col. Sykes as existing in the species of *Manis*. "To receive the additional length and point of the middle toe," observes Sir R. Ker Porter, "a protruding mass of hard flesh stood out from the wrist, wherein was a cavity destined for the reception of the ungulated elongation when the animal was in a standing position." He adds, "From the awkward formation of the fore feet, quickness of motion becomes impossible; hence they may be caught in the smallest open space (when seen) with little difficulty."

Sir R. Ker Porter adds a list of the *Mammalia* known to exist in the Province of Caracas, and describes the arrangements which he has made for preserving such of them as he may succeed in procuring for the Society until an opportunity occurs of transmitting them to England. He also refers to several Birds which he hopes to procure, including the *common* and *galeated Curassows*.

The skins were exhibited of two animals forming part of a small collection of *Mammalia* and Birds brought from the neighbourhood of Swan River by Lieut. Matthew Friend, R. N., Corr. Memb. Z. S., and presented by him to the Society. Mr. Ogilby expressed his belief that both these animals had been hitherto unnoticed by systematic writers, and read the following descriptions of them.

HYPSIPRYMNUS SETOSUS. *Hyps. pilis suprà setosis, fusco-cinereis, infrà canescentibus; auriculis latis, nudis, nigris; caudâ mediocri, gracili, squamatâ, pilis brevissimis rigidis vestitâ.*

"Of the different species of *Hypsiprymni* inhabiting the continent and dependencies of Australia, and of which the characters are but little known, many have been hitherto confounded with the *Kangaroos*. That to which I have given the name of *Hyps. setosus* is known in the colony of New South Wales by the native name of *Bettong Kangaroo*. The specimen now described is believed to have been brought from the Swan River; an interesting circumstance, since it shows that some, at least, of the species common to the eastern shores are found equally upon the opposite coast.

"This species is about the size of a small Rabbit, with a larger head, and comparatively shorter tail and legs, than are generally found among other Saltigrade Marsupial animals. It has a small muzzle; round naked ears like those of a Rat, but almost concealed in the long shaggy fur which surrounds them; a tail not quite two thirds the length of the body, of a dark scaly appearance, sparingly provided with a few coarse black hairs. The legs and feet are also dark, and covered with very short coarse hair. All the upper parts, the head, neck, shoulders, back and loins, are covered with long shaggy hair, of a rude bristly quality and a dark ashy-brown colour, thinly interspersed with single hairs of a light bay or sandy gray colour. Beneath, on the chin, breast, and belly, the fur is of a very fine close quality, and of a uniform light ashy-brown colour; and it is to be observed, that a thick coat of the same fine fur is found beneath the coarse hair upon the upper surface of the body."

ORNITHORHYNCHUS BREVIROSTRIS. *Orn. rostro brevi; vellere densissimo, suprà fusco-rufo, infrà albescente.*

"At first sight this animal might be regarded as identical with *Orn. rufus*, which it closely resembles in the quality and fineness of the fur, as well as in the general colour of the body; but a careful comparison of these circumstances, and particularly of the proportions of the bill and other parts, is sufficient to establish the specific difference of these two animals. The fur of the new species is thickly furnished, rather longer, and of a softer quality than in the other *Ornithorhynchi*, and presents something of a shining or metallic lustre when rubbed smoothly down with the hand. It is of a uniform dark vinous red colour on the upper parts of the body, and of a silvery white beneath; the head is dark brown; and the feet are light gray. But the peculiar character of *Orn. brevirostris* is found in the bill, which is very nearly as broad as it is long, whilst in the other species the length of this organ is at least double its breadth. In other respects its characters, as far as they can be ascertained at present, agree with those of its congeners. The bill is of a very dark colour, approaching almost to black; the skin remarkably thick for so small an animal. The following are its principal dimensions:—

	ft.	in.
Length from the base of the bill to the origin of the tail..	1	0
——— of the tail		$3\frac{1}{2}$
——— of the bill..............................		$1\frac{1}{2}$
Breadth of the bill..............................		$1\frac{1}{4}$."

Stuffed specimens of *Orn. rufus* and *Orn. fuscus* having been placed on the table, the distinctions between these and *Orn. brevirostris* were pointed out by Mr. Ogilby.

About thirty Bird-skins, collected during the last summer in Shetland by Mr. William Lord, and presented by him to the Society, were exhibited. The most worthy of particular notice were a specimen of the *long-tailed Duck, Anas glacialis*, Linn., in its summer plumage; and an example of the *brown-headed Gull, Larus capistratus*, Temm. As this *Gull* has received but little notice as a British bird, Mr. Yarrell added the following description of the specimen, also in its summer plumage.

"This bird is at once distinguished from *Larus atricilla*, Linn., and *Larus ridibundus*, Leisl., (both also British Gulls, and with both of which it has been confounded,) by its more slender as well as shorter beak, shorter *tarsi*, and smaller feet. The whole length of this specimen from the point of the beak to the end of the tail feathers is 15 inches; from the point of the beak to the first feathers, 1 inch and half a line; from the point of the beak to the *rictus*, 1 inch 10 lines; from the *carpus* to the end of the first primary (which is the longest), 11 inches 8 lines; length of the *tarsus* 1 inch 7 lines; of the middle toe and nail 1 inch 6 lines. The beak brownish red; the head and upper part of the neck brocoli-brown, bounded by blackish brown, descending lowest at the fore part, some of the dark feathers at the margin in front tipped with white; the remaining portion of the neck, the breast, *abdomen*, vent and tail, pure white; upper surface of the wings pale ash-gray, under surface grayish white; primaries white, edged and tipped with black, broadest on the inner web, shafts white; legs and toes brownish red, webs of the feet chocolate-brown.

"Inhabits the Shetland and Orkney islands."

At the request of the Chairman, Mr. Gould exhibited about thirty recent specimens of the *Stormy Petrel, Thalassidroma pelagica*, Vig., received by him from the eastern coast of England; and a recent specimen of the *Pomarhine Gull, Lestris Pomarhinus*, Temm., obtained from the same locality. A living pair of the latter bird have since been added to the Society's Menagerie by the kindness of James Cornish, Esq. who obtained them on the coast of Devonshire.

The following Notes by Mr. Owen, taken at the dissection of two *Seals* (*Phoca vitulina*, Linn.), which died at the Society's Gardens, were read.

"All the parts bore the deep venous tint which appears to be peculiar to those *Mammalia* whose aquatic habits tend to impede their respiration. The cellular texture was extremely tough, with a granular appearance, somewhat resembling the structure of the *corpus cavernosum*: it is the same in the *Porpoise*. It was also gorged with bloody *serum*, a great quantity of which was contained in the cavity of the *abdomen*. The *omentum* was very thin and without fat, (of which indeed there was a deficiency over the whole body): it extended over half the contents of the *abdomen*.

"The stomach was situated in the left *hypochondrium*: its pyloric end was bent acutely upon the cardiac: the *œsophagus* entered at the left extremity, leaving no *saccus cœcus* beyond it. The pyloric aperture was extremely small as compared with the size of the stomach;

it was provided with a valvular apparatus similar to that described in the stomach of the *Armadillo* (p. 142.), consisting of a tubercle composed of condensed cellular structure, which projected above the orifice, and gave it a semilunar form. This valve, together with the small size of the orifice, must contribute to retain the food in the stomach until it has undergone complete digestion. It is difficult to imagine that the cranial bones or *vertebræ* of fishes can pass through this aperture, unless they are previously dissolved. Are they regurgitated, like the castings of Owls? The transverse diameter of the *pylorus* was half an inch, its vertical diameter not more than 2 lines; the diameter of the cardiac aperture was 1 inch and a half.

"The *duodenum* descends abruptly from the *pylorus*, and is connected by a continuation of *peritoneum* with the pyloric end of the stomach. It is contracted at its origin, but soon dilates, and a *sacculus* is formed between its muscular and mucous coats for the reception of the biliary and pancreatic secretions, which afterwards are conducted through a narrow passage into the intestine. Having descended as far as the right kidney, the *duodenum* turns to the left in the usual manner, but has a complete investment of *peritoneum* through its whole course: at the left side of the *abdomen* it carries forward this process of *peritoneum*, which forms the mesentery in the usual manner. The small intestines do not exceed 1 inch and a half in circumference, but their deficiency in this article of their dimensions is compensated for by their great length. The large intestines commence by a short round *cæcum*, which in both instances was situated close to the pyloric end of the stomach: the greatest circumference of the *colon* was 4 inches.

"The interior of the stomach was smooth and without *rugæ*; the intestines had the same character.

"The liver consisted of five lobes, which were remarkably elongated, somewhat triedral, and pointed at the extremity. The gall-bladder, 2 inches and a half long, was lodged in the third lobe, counting from the right; the suspensory ligament entered another division of this lobe. The gall-bladder received two small ducts directly from the liver, or hepato-cystic ducts. The cystic duct was joined by a small hepatic duct about half an inch from the gall-bladder; and a little lower down was joined by a larger hepatic duct, which was formed by the junction of two other ducts, each of which was also formed by the union of two ducts, coming distinctly from the four smaller lobes of the liver. The *ductus communis* was 1 inch and a half long; it was joined by the pancreatic duct, as it terminated in the dilated *sacculus* before mentioned.

"The *pancreas* was composed of a large and a small portion of the usual structure and in the usual situation. The spleen, a flattened body with an irregular notched margin, measured 5 inches and a half in length. It was attached to the *epiploon* in such a manner that it could be drawn away for some distance from the stomach, and in the intervening membrane were situated a number of small dark glandular bodies from the size of a horse-bean to that of a pea, which, if they had been met with in a *Porpoise*, I should have considered as accessory spleens. This circumstance was noted in the dissection of the first *Seal*, but was not attended to in the second.

"The kidneys were conglomerate and of large size. The veins ramify on the exterior, but are different both in the manner of ramification and in proportionate size from those of the feline tribe. In the latter animals about one fourth only of the venous blood is thus returned, and the veins put on an arborescent appearance; but in the *Seal* the whole of the blood is carried back along the exterior of the kidney, and the veins form a network around the gland, filling up the interstices of the lobules.

"The *viscera* of the chest were disposed in the usual manner.

"The *pericardium* was attached by cellular membrane both to the *sternum* and to the diaphragm. The inferior *cava* was consequently shorter than in most quadrupeds; it was also smaller above than below the diaphragm, where it appeared to form a capacious *sinus* by the union of the large hepatic veins. The heart was flat and broad, much resembling in figure the ventricular part of the *Turtle's* heart; its *apex* obtuse. The appendix of the right auricle had two processes, one covering in the usual manner the origin of the pulmonic artery, the other lying upon the right ventricle. In the interior of this cavity are seen in a striking manner the original relations of the inferior *cava*; the *septum* of the auricles appears to be formed by a continuation of the left *parietes* of the superior *cava*, and terminates in an arched form to the right of the orifice of the inferior *cava*. This vein in consequence appears to open directly into the left auricle. In the younger of the two *Seals* the valve which cuts off this original communication (*valvula foraminis ovalis*) was incomplete, and a large *foramen ovale* was the consequence: in the other *Seal* it was complete as to its formation, but not with respect to its adhesion,—an oblique aperture, sufficient to admit a goose-quill, still remaining at its upper margin. I should not imagine an open *foramen ovale* to be an essential condition in the structure of the adult *Seal*.

"In the younger *Seal* the *ductus arteriosus* had still a smooth cavity, but was closed at the extremities, so as to prevent any admixture of pulmonic and systemic blood through this passage. In the older animal the cavity was totally obliterated.

"The lungs were of large size, and had the same livid, gorged appearance as in the *Porpoise*. They were partially divided into two lobes on each side; the upper being half the size of the lower lobes, and the left lung somewhat larger than the right. The cartilages of the *trachea* were complete circles, as in the *Porpoise*. The *epiglottis* was of a triangular form, its point projecting above the *velum palati*, and slightly indicating the structure which is carried through the *Dugong* to such a peculiar extent in the true *Cetacea*. The thyroid glands were detached bodies, each of the size of an almond, and exactly resembling the absorbent glands in this animal, which were generally of large size.

"The tongue was thin, narrow, and bifid at the extremity. The *os hyoides* was attached to the styloid process by ligament. The only salivary glands found, were the submaxillary, which were about the size of nutmegs.

"With respect to the organs of generation in the male, the *testes* lay obliquely upon the body of the *pubis* outside the *abdomen*, but, as is common to the aquatic *Mammalia*, without making any projection externally; the communication between the *tunica vaginalis* and *abdomen* was large enough to allow these glands to be pushed back into the latter cavity. There were no *vesiculæ seminales*, and only a very small prostate. The *penis* has a pointed *glans*, and a bone about half an inch long, of a flattened form with thicker extremities; into this bone are inserted two *retractor* and *depressor* muscles, which arise from the common anterior tendon of the *sphincter ani*. From the prepuce to the *anus* measured 5 inches, the *penis* being inclosed in a sheath and making no projection externally.

"The muscles of the fore and hind-flippers were dissected: in the latter are two peculiar muscles for expanding the web of the foot, which have been described in detail by Carus. The extent of origin of the *pectoralis major* is increased by a cartilaginous process, 3 inches long, continued from the *manubrium*, or first bone of the *sternum*. This circumstance involuntarily reminds one of the *Mole*, where a similar structure exists, also in connexion with vigorous rotatory movement of the anterior extremity: but in that animal the structure is by so much the more marked, as progressive motion is attended with the displacement of denser and more resisting matter; it may be said, indeed, to swim in the earth.

"The following admeasurements are from the larger of the two animals.

	ft.	in.	lines.
From the snout to the end of the hind-flippers......	3	0	0
—— —————— tail	2	7	6
——————— commencement of the fore-flippers	0	10	0
Circumference of the body, taken behind the fore-flippers	1	10	0
————— of the tail, behind the hind-flippers .	0	3	0
Length of the stomach	1	5	0
Circumference of widest part, when distended, ...	1	2	0
Length of intestinal canal........................	42	10	0
——— of *cæcum*	0	0	10
——— of large intestines....................	2	0	0."

Mr. Owen also read the following "Notes on the anatomy of a young *Weasel-headed Armadillo*, *Dasypus* 6-*cinctus*, Linn., which was brought forth at the Society's Gardens on the 3rd of September, and died on the 16th of November. It had nearly acquired its full growth, and had increased in weight during that short period 52oz. 2dr.

"Its admeasurements were as follows:—

	in.	lines.
From the end of the nose to the setting on of the tail	11	3
——————— to the *vertex*	3	6
From the *vertex* to the first band	2	6
Breadth of the head across the eyes	2	3

"This species is of a darker colour and more hirsute character than the *nine-banded Armadillo*, the anatomy of which has been recently given (p. 141.). Its head is shorter and broader, and the coronal plate of a triangular, instead of an oval, form. The middle bands also become more gradually blended with the last portion of the armour, and the tail is much shorter, measuring only 4½ inches in the present species, while in the *nine-banded* it is nearly 9 inches in length. The ears, though of the same form, are also proportionally shorter, being but 1 inch in length and half an inch in breadth. The most important differences, however, are in the additional toe on the fore-foot of the *Weasel-headed* species, and the additional teeth implanted in the intermaxillary bones. Of these this young animal had already acquired its full complement, having 9—9 in the upper jaw, and 10—10 in the lower, all of one character, simple, cylindrical, and separated by interspaces. There are also remarkable differences in the forms and proportions of the scales in different parts of the armour of the two species.

"On laying open the *abdomen* the *viscera* presented much the same appearance as in the *nine-banded* species, except that the gall-bladder, being more deeply imbedded in the liver, appeared on the convex side of that *viscus*.

"The stomach had the same general form; but a greater proportion of the cavity was situated to the left of the *œsophagus*, the whole of the dilated globular part or reservoir being so placed. The length of the stomach when distended was 3½ inches, its greatest perpendicular diameter or depth 2¼ inches: the *œsophagus* entered 2 inches from the left extremity. The lining membrane was uniformly villous; *rugæ* were seen about the middle of the cavity; these were few in number, longitudinally disposed, and converging towards the pyloric end. The *parietes* of the stomach, which are thin at the greater end, become increased (as in the species formerly described) by the accession of muscular fibres, and at the *pylorus* attain a thickness of 2 lines. This part is unprovided with the valvular protuberance observed in the stomach of the *nine-banded* species, but the pyloric orifice was so small that it was with some difficulty that I could discover it: from its oblique situation and the thickness of the surrounding *parietes*, I have no doubt that the same purpose is attained of opposing the egress of the alimentary matter during the time it is undergoing the requisite comminution. The stomach externally has the same tendinous appearance on each side at the smaller end.

"The *duodenum* receives the biliary and pancreatic secretions at the distance of 1 inch from the *pylorus*; its dispositions and connections, together with those of the rest of the small intestines, were the same as in the *nine-banded* species; but their length was in this specimen much less, being only 9 feet 6 inches. With respect to the large intestines a remarkable difference presented itself in the presence of two short but wide *cæca*, between which the small intestine entered the *colon*, and terminated. The largest of these pouches was very thin in its coats, and its length was an inch; the *parietes* of the smaller pouch were thicker, and exhibited patches of glands on the inside; its length was half an inch. The terminal orifice of the *'lium* is in the form of a slit with tumid margins situated on the middle of the ridge which separates the two pouches, and therefore liable to be closed by the lateral pressure of the fæcal matter distending those pouches.

"Should this structure be confirmed by subsequent examinations of other individuals of the *six-banded* species, the absence of a *cæcum* can no longer be admitted among the generic characteristics of *Dasypus*. And it is interesting to observe, that the absence or presence of a *cæcum* as a generic distinction holds with as little force in the allied genus *Myrmecophaga:* for according to Daubenton there exist in one species (*Myrm. didactyla*, Linn.) two small *cæca;* while the *Tamandua* (*Myrm. Tamandua*, Cuv.), we are assured by M. Cuvier, has not any. In these apparently capricious variations of structure among the *Edentata,* it is impossible not to observe a tendency or an approximation to the structure of another class; which I am inclined to think is that of *Birds.* For in addition to the double *cæcum*, a peculiarity so remarkable in that class, we have also a gizzard-like structure exhibited in the tendinous external appearance and thickened muscular coat of the stomachs of the *Dasypodæ*, and a still nearer approximation to that form of stomach in the *Manis*, where the muscular coat at the pyloric end is 5 lines in thickness, and the inner surface is defended by a strong cuticle, roughened with *papillæ*. A similar structure exists also in the *Myrmecophagæ*, which moreover supply the want of grinders in the mouth by swallowing, in the same manner as the *Gallinaceous Birds,* small pebbles for the purpose of bruising and destroying the vitality of the insects which constitute their food. [See Burt in Asiatic Researches, vol. ii. p. 354, with respect to the fact of small stones and gravel being swallowed; and Lawrence's Blumenbach, Comp. Anat. 2nd edit. p. 89. for the true physiology of the fact.] In this genus also we find mucous glands about the *os hyoides* of the nature of those follicles which in *Birds* take the place of the conglomerate salivary glands of the *Mammalia,* and the secretion of which serves in the *Ant-eaters,* as in the *Woodpeckers,* to lubricate a projectile tongue. In another group of the *Edentata,* viz. the *Bradypodæ,* we are presented with a still more marked affinity to the structure of birds, in the abnormal number of cervical *vertebræ* exhibited in the *three-toed Sloth,* a peculiarity which it is difficult to refer to any other circumstance than the disposition of nature to pass by means of this anomalous order from the *Mammalia* to the *Birds.* The transition is indeed nearly completed by the *Monotremata*; for of the two genera contained in this order, *Echidna* presents us with the quills, and *Ornithorhynchus* with the beak, of a bird; and it is far from being proved that the mode of generation is not the same.

"With respect to the *Armadillo:* The commencement of the *colon,* which is formed by the union of the two *cæca* above described, is nearly 2 inches in diameter, but quickly diminishes to half an inch: near its termination it is again slightly dilated. A well marked chain of lacteal glands accompanies the mesenteric artery.

"The lungs were divided into three lobes on both sides, the additional lobe having reference probably to the greater breadth of the chest in this species. The *larynx, pharynx, fauces* and tongue presented the same appearances as in *Das. Peba;* but the latter part is proportionally shorter, corresponding to the difference in the length of the jaws.

"The liver and *pancreas* resembled those of *Das. Peba.* The spleen was broader and flatter, and a small supernumerary spleen was lodged in the head of the *pancreas:* probably an accidental variety.

"The submaxillary glands are of the same proportionate magnitude, and have a similar bag appended to them as in the species before described. The cyst is situated on the inner side of the anterior extremity of the gland; a similar provision exists to prevent regurgitation of the *saliva* by the *ductus inferentes*, or those which pass from the gland to the bag; and the *ductus efferens* terminates as in *Das. Peba* close behind the *symphysis* of the lower jaw.

"The organs of generation presented many circumstances worthy of notice; but I shall defer giving an account of them, until I have an opportunity of examining them in the adult animal. There was, however, a peculiarity in the urinary bladder which may be noticed here. The *urachus,* instead of coming off as is usual from the summit of the *fundus*, is continued from the middle of the anterior part of the *bladder*, to which point the remains of the umbilical arteries also converged. A process of *peritoneum* is continued from this part and down the middle line of the bladder below to the abdominal *parietes* in front of the bladder. It is my intention to investigate this peculiarity in other *Edentata.*"

December 13, 1831.

The Honourable Twiselton Fiennes in the Chair.

The Chairman exhibited a specimen of a hybrid *Duck* bred between a male *Pintail* and a *common Duck*. It was one of a brood of six, several of which were subsequently confined with the male *Pintail* from which they sprung, and produced young. A specimen of a female of this second brood was also exhibited.

A specimen was exhibited of a young *Puma*, *Felis concolor*, Linn., which had recently been brought forth at the Society's Gardens, but had immediately died. Like the young of the other species of *Felis* it was variously spotted and striped, the depth of its markings approaching nearly to black, and being more intense than that observed in the *Lion*. The muzzle was nearly black, as was also the greater part of the tail. The young specimen was strongly contrasted with a specimen of the adult, which was placed on the table for comparison.

Preparations were exhibited of the swimming-bladder and of a portion of the roe of a female *Conger Eel* of considerable size (*Conger vulgaris*), presented to the Society by William Gladdish, Esq.; and Mr. Yarrell read the following notes of his examination of the individual from which the preparations were obtained.

"The specimen, weighing 36lbs., was of the usual uniform hair brown colour above, passing into dirty white beneath; the dorsal and anal fins white at the base and black on the edge throughout their whole length; the body distended by its contents; from the anal aperture the tail tapered off rapidly, ending almost in a point. It proved to be a female.

"The *abdomen*, when opened, was found to contain two very large lobes of roe, extending the whole length of the body, and passing several inches beyond the vent to the extreme end of the internal cavity; these lobes were composed of *ova* of a size to be distinctly apparent to the unassisted eye, particularly when directed towards the margins of the numerous *laminæ*. The liver was formed of one single elongated lobe, which was broadest at the upper part, and, gradually diminishing both in width and thickness, ended acutely; the gall-bladder was rounded in form, and filled with bile of a fine olive-green colour.

"Behind its peritoneal covering the bright silver-coloured membrane which forms the elongated swimming-bladder was beautifully contrasted by the dark purplish-red colour of its gland, which in two expanded portions occupied a lateral but central situation between the two extremities; and from the swimming-bladder a canal directed forwards reached the upper part of the stomach, opening into it by a very minute orifice.

"The differences, internal as well as external, between the salt-water *Conger* and the *sharp-nosed* fresh-water *Eel* will be made more apparent by a short description of the appearances taken from a small specimen of each of equal size and length.

"The head of the *Conger* is larger; the mouth wider and deeper; the lips fleshy; the upper jaw the longest; the teeth occupying a narrow linear space on both maxillary bones, forming three rows, of which those in the middle line are much the largest; numerous smaller teeth, more uniform in size, occupy the line of the *vomer*, but do not extend far backwards. The eye is as large again as in the *Anguilla;* the pectoral fins arise in this small specimen 3 inches and 3 lines from the point of the nose, long, narrow and white; the dorsal fin arises 4 inches 10 lines from the nose, and but 9 lines behind the end of the pectoral fin rays. The head of the *Anguilla* is narrow; the nose pointed; the mouth small, lips thin, lower jaw the longest; the teeth occupying a broader surface in both jaws, and extending backwards over a considerable portion of the *vomer;* the eye much smaller, and placed nearer the nose than in the *Conger*, and over the angle of the gape in both; the pectoral fin, round in shape and dark in colour, arises 2 inches 4 lines from the nose; the dorsal fin commences 6 inches from the end of the nose and 2 inches 8 lines behind the end of the pectoral fin rays.

"The whole of the inferior surface in both specimens being removed to expose all the *viscera*, the heart in the *Conger* is seen to occupy a lower situation than in the other *Eel*, the *aorta* issuing from the ventricle in both examples on a line with the origin of the pectoral fins. The stomach of the *Conger* is as long as the abdominal cavity, of nearly equal breadth throughout, and finishes by a broad rounded end; the calibre of the intestine is greater; and the *parietes* of both stomach and intestines very thin. The stomach of the fresh-water *Eel* is widest at the cardiac portion, and diminishes gradually, ending 1 inch 3 lines short of the *anus* in a narrow point, which is attached to the peritoneal covering of the swimming-bladder; the intestinal canal is narrow; and the *parietes* of that and the stomach thick and muscular.

"The *broad-nosed* fresh-water *Eel* is equally distinct from the *Conger*, having more numerous teeth, which occupy a much broader surface on both maxillary bones, and the dorsal fin commencing still lower down the back than in the *sharp-nosed Eel.*"

A preparation was exhibited of the organs of generation of a female *Kangaroo;* and Mr. Owen explained many of their peculiarities. He referred particularly to the supposed existence of peritoneal canals, and pointed out on the preparation the appearances which seemed to him to have deceived the only observers by whom the presumed canals had hitherto been noticed.

In illustration of the subject he read the following Notes:

"The interest which attaches to everything relating to the generation of the *Marsupial* animals, induces me to offer the following observations on the anatomy of the *Kangaroo*, although they do little more than record a negative fact.

"Having had opportunities of verifying the discoveries of M. Geoffroy-Saint-Hilaire of the peritoneal canals in the *Crocodile* and *Tortoise*, I felt desirous of putting also to the test of observation his more recently recorded discovery of similar canals in the *Kangaroo*. The accidental death at the Society's Gardens of a fine female of the common species (*Macropus major*, Shaw,) afforded a favourable opportunity of making the investigation, and the following results were obtained.

"The disposition of the *peritoneum* at the pelvic region of the *abdomen* is as follows: an anterior fold of the membrane is reflected from the mesial line of the abdominal *parietes* upon the anterior part of the urinary bladder; two lateral folds are continued from the sides of the bladder to the posterior part of the middle *uterus*, from whence they are reflected to the iliac and lumbar regions of the *abdomen*, representing the broad ligaments, and including the uterine vessels, Fallopian tubes, and ovaries. In the pouch thus formed behind the bladder, the lateral uterine tubes and body of the *uterus* are contained. From the posterior part of the neck of the *uterus* the *peritoneum* is reflected upon the *rectum*, and as it is in this situation that the peritoneal outlets exist in the *Crocodile*, the membrane was here first examined, but without the slightest appearance of an aperture being detected. The peritoneal cavity between the *uterus* and bladder was next examined, and particularly where the membrane is reflected from the lower part of the lateral tubes (*ad uterums*, Geoff.), this being the situation where the description of M. Geoffroy-Saint-Hilaire would lead us to expect them. There was, indeed, in the angle between the lateral and middle *uterus* a narrow peritoneal pouch, which seen from above appeared like the orifice of a canal; but on sounding this with an eye-probe, uniform resistance was met with, and on laying the cavity carefully open the membrane was found to be entire and imperforate at the bottom. The remainder of the *peritoneum* in this neighbourhood was searched over, but with the same want of success.

"The female was adult, but was believed never to have been with young.

"I repeated the examination on the female parts of an adult *Kangaroo* (also without young), which had been preserved in spirits from a former dissection, and in which the peritoneal connexions between the bladder, *uterus* and *rectum* were entire. The same small blind pouches were found in the situation indicated above, but not any trace of the orifices of canals. M. Geoffroy-Saint-Hilaire acknowledges he was unable to find analogous canals in a male *Kangaroo* that he examined subsequently to the female; and as the dissection on which his supposed discovery is founded appears not to have been performed by himself, these canals, unless confirmed by further observation, must be considered as at least of doubtful existence.

"While on the subject of the *Kangaroo*, I take the opportunity to add a few remarks on the disposition of the stomach of this animal. From the account of this part by Sir Everard Home it would appear that the *œsophagus* is encompassed by the stomach in a remarkable manner [Phil. Trans. vol. xcvii. p. 152.]: but this disposition I have not been able to observe in four dissections of the *Kangaroo;* nor, from the peritoneal connexions of the *viscus*, can it ever occur in the living animal. The stomach, indeed, is situated in a manner very analogous to what is ordinarily found in the *Mammalia*, excepting that from its great size it occupies a larger space in the *abdomen.*

"On laying open that cavity the sacculated character of the stomach sufficiently distinguishes it from every other part of the intestinal canal, and it generally extends as low down as the left lumbar region. The left extremity lies in the epigastric and left hypochondriac region, folded upon itself and sternad of the *œsophagus.* This part must be turned to the left, and a little dissection performed, before the *œsophagus* can be brought into view, when it will be seen long and narrow, running 4 or 5 inches within the *abdomen* before it terminates. The extent of the stomach to the left of the cardiac orifice is about 5 inches, and the termination of the cavity at that end is bifid, as represented by Mr. Clift. From the cardiac orifice the stomach enlarges in bulk, and descends to the left lumbar region; it then turns obliquely upwards, crossing the *abdomen* to the right *hypochondrium*, where the pyloric end makes a sudden turn downwards and backwards, and terminates in the *duodenum* just above the right kidney. From this part and the *duodenum* a process of *peritoneum* is continued to the right iliac region, firmly binding them down in that situation.

"On inflating the stomach before any of its connexions are destroyed, the only alteration in its position is to raise it, and throw its lower boundary forwards: but on dividing the peritoneal band which ties down the *pylorus* and cutting across the *duodenum* beyond the ligature, and then continuing the inflation, the pyloric end of the stomach immediately rises and winds round behind the *œsophagus* to the left side of the *abdomen.* It is therefore most probable, that the description alluded to was taken after the stomach had been removed from the body and blown up; as the beautiful drawing certainly was, which illustrates the description.

"The account given in the Paper referred to of the cuticle, villous surface, and glands on the interior of the stomach, perfectly accords with nature: but the *sacculi* resemble more nearly those appended to the first cavity of the stomach of the *Llama* than the human *colon;* and I should think the former a more natural analogy."

Mr. Owen also read the following Notes on the anatomy of the *American Tapir, Tapir Americanus*, Gmel.

"The death of the male *American Tapir* having afforded an opportunity of examining its anatomical structure, I proceed to lay before the Committee a portion of the notes taken on that occasion, confining myself to such additional circumstances as have not appeared in previous accounts. Of this species the latest anatomical description is that which is given by Mr. Yarrell in the 4th volume of the 'Zoological Journal' to the accuracy of which this dissection bore ample testimony.

"The disposition of the *viscera* of the *abdomen* was as follows. The liver occupied the epigastric region and a part of both *hypochondria*: the stomach lay transversely below the liver: two large transverse folds of the *colon* stretched across the umbilical region: and in the lowest part of the *abdomen* the *cæcum* alone was visible. These *viscera* were partially covered by a thin *epiploon*, in which was very little fat.

"The *œsophagus* enters the stomach about one third from the left extremity. The cuticular membrane is continued from it into the stomach, for the extent of 3 inches towards the left end, and for 7 inches towards the *pylorus*; the rest of the cavity had a smooth or compact villous surface, with a few narrow but well defined *rugæ*; the villous coat became thicker and apparently more glandular towards the *pylorus*. The pyloric end of the stomach had a tendinous lustre on each side. The colour of the villous coat of the stomach was different from that of the *duodenum*. In this intestine the villous membrane was raised in transverse folds or *valvulæ conniventes* for the extent of 4 or 5 inches; but the inner surface of the rest of the small intestines was without any folds. The diameter of the small intestines was 1 inch and a half, their length 45 feet. Near the termination of the *ilium* there were some small ulcerations. The mesenteric arteries form only a single series of arches in the mesentery close to the intestine. The principal mass of the mesenteric glands was situated at the termination of the *ilium*, and appeared to be diseased, being hard and scirrhous, and containing gritty or calcareous particles. The large intestines commenced by a capacious *cæcum* of the form described and represented by Mr. Yarrell; after this the *colon* forms the transverse folds before mentioned, which are connected together; and then becomes free, or has a loose *mesocolon*; and it is here that the *fæces* appear to be first formed or separated.

"The liver consists of four lobes, the two external being connected by a transverse band passing along the under surface of the liver. The largest lobe, the third from the right, had two deep notches, into the left of which the coronary ligament and remains of the umbilical chord passed. The gall-bladder is deficient, and the gall-duct emerges from the transverse connecting band mentioned above; it is about 2 lines in diameter, and terminates in the *duodenum* 3 inches from the *pylorus*. From this point it was traced backwards for 7 inches without varying its diameter. The *pancreas* extended from the spleen to the *duodenum*, and measured 9 inches in length; at the *duodenum* a process descended at a right angle in the process of the *peritoneum* connecting the *duodenum* to the *cæcum*, which process measured 5 inches in length. The spleen is a flattened elongated body, measuring in length 1 foot 8 inches, and in breadth 4 inches.

"The kidneys were conglobate, 6 inches long, 3½ inches broad:

the cortical substance from 1 inch to 1 inch and a half in extent: the tubular part terminating in a very small *pelvis*, but not projecting in the form of *mammillæ*. The ureters contained opake fluid like *pus*, but the kidneys did not appear diseased. The suprarenal capsules were 3 inches in length, and 1 in width; along the middle of these bodies there was a line of substance differing in colour from the rest: the cortical part was striated, the *striæ* converging to the central line.

"The whole of the lungs had a mottled appearance, arising from the deposition of numerous large masses of tubercular matter similar to that observed in the mesenteric glands.

"The heart is large in proportion to the animal, and of a rounded form with an obtuse *apex*; the length of this organ was 7 inches, its breadth across the base 6 inches. The *trachea* was small in its diameter, but the cartilages are thick and strong, and incomplete behind.

"The *os hyoides* is articulated to the base, not the *apex*, of the styloid processes.

"The *proboscis* is provided with two strong round *levatores* arising from the *ossa nasi*; there are also *depressores* arising from the intermaxillary bones, and *fasciculi* of muscular fibres in its substance, forming a texture similar to the *proboscis* of the *Elephant*; the strong *levatores* are well adapted to enable this part to turn up the soil, when the animal is in search of roots, &c.

"The *testes* are elongated glands, 4 inches in length, situated externally in a slightly indicated *scrotum* at the distance of 6 inches from the *anus*. The *cremaster* was remarkably powerful, being composed of a strong *fasciculus* of fibres continued from the lower margin of the internal oblique muscle, of upwards of 1 inch in breadth. The *tunica vaginalis* had a free communication as usual with the cavity of the *abdomen*. The *penis*, of great length, terminates in an enlarged truncate extremity, the orifice of the *urethra* being near the lower margin of the disc. There are no *levatores* muscles; but a quantity of elastic cellular membrane extends from the abdominal muscles along the *dorsum penis*.

"On comparing my notes with those taken by Mr. Clift at the dissection of the *Sumatran Tapir*, I find the differences in the admeasurements of the alimentary canal, especially of the *cæcum*, not so considerable as are stated by Mr. Yarrell. It must, however, be remembered that the individual dissected by the latter gentleman was much younger than that from which my notes are derived.

"Thus in the Account published by Sir Everard Home in the Philosophical Transactions for 1821, the dimensions of the *cæcum* of the *Sumatran Tapir* are stated to be 1 foot in length, and 1 foot in breadth: in the *American Tapir* the length of the *cæcum* was 1 foot 3 inches, its greatest breadth 1 foot.

	ft.	in.
The length of the small intestines in the *Sumatran Tapir*	69	0
———————— in the *American Tapir*	45	0
——— of the large intestines in the *Sumatran Tapir*	19	6
———————— in the *American Tapir*	9	0

The comparative shortness of the intestinal canal in the *American*

Tapir is a specific difference difficult to be accounted for in the present state of knowledge respecting the natural habits of the two species, but further examination of the *Sumatran Tapir* seems wanting to prove that it is compensated for by an increased size of *cæcum* in the *American* species."

At the request of the Chairman, Mr. Spooner adverted to the case of a *Leopard* lately living at the Society's Gardens. It had been suspected to be labouring under *ascites*, but on its death its bulk was found to have been occasioned by an excessive deposition of fat both in the *abdomen* and *thorax*. A conversation ensued among the Members present; and Mr. Spooner having stated his belief, corroborated by his having observed similar results in *Dogs*, that distant periods of feeding with full meals occasioned corpulence and disease of skin, while frequent and more sparing meals led to the recovery of health and activity, it appeared to the Committee desirable that this proposition should be submitted to the test of direct experiment.

It was therefore ordered,

That it be suggested to the Council to select, for the purpose of experimenting as to the best mode of feeding them, at least two feline animals: that one be fed in the manner now practised at the Society's Gardens, viz. with one full meal daily, and that the other be fed twice a day with one half the quantity of flesh now given for a meal; that notes be made of the circumstances of the animals at the time of commencing the experiment, of the quantity of food taken daily by each, of the times of feeding, and of the results; and that reports thereon be made monthly during the continuance of the experiment: that to render the results of the experiment more conclusive it be tried on the greatest number of any one species that the state of the Society's collection will permit: and that, so far as the collection will allow, similar experiments, varying only according to circumstances, be tried on animals of other carnivorous genera.

December 27, 1831.

William Clift, Esq. in the Chair.

Mr. Vigors reported that the Resolution agreed to at the last Meeting of the Committee had been communicated to the Council: that the Council, fully concurring in the propriety of instituting the experiments suggested therein, had directed that they should be tried on two Leopards, two Ocelots, and two Hyænas: and that instructions had been accordingly given to the Head-keeper to carry them into effect.

A collection of animals preserved in spirit, and recently presented to the Society by Charles Barclay, Esq., was exhibited. It was collected by Charles Telfair, Esq., of the Mauritius, Corr. Memb. Z. S., and contained specimens of *Mammalia*, Fishes, Reptiles, and Insects. Among the former were individuals of two species of *Tenrec*, *Centenes*, Illig., which were pointed out as the *Cent. setosus* and *Cent. semispinosus*, and reference was made to the habits of the animals of this genus as described by Mr. Telfair in a communication read to the Committee on June 14 (p. 89). The apparently good state of preservation of the specimens authorized the hope that their anatomical structure might be properly investigated.

The remaining portion of the collection of *Fishes* formed at the Mauritius by Charles Telfair, Esq., Corr. Memb. Z. S., and presented by him to the Society, was exhibited. The species contained in it were brought in succession under the notice of the Committee by Mr. Bennett, who pointed out more particularly those which he believed to be new to science. As such he named and characterized the following:

SCOLOPSIDES PHÆOPS. *Scol. lobis pinnæ caudalis filamentosis: rostro superciliisque alepidotis, nigrescentibus, illo vittâ argenteâ infra oculum productâ infernè marginato; lineâ obliquâ pallidè argenteâ ab oculo ad præoperculi angulum decurrente; operculo toto squamato; vittâ dorsali utrinquè argenteâ supra lineam lateralem; caudâ supernè maculâ nigrescenti notatâ.*

D. $\frac{10}{9}$. A. $\frac{3}{7}$ &c.

Scol. frænato, Cuv. & Val., videtur maximè affinis. Differt vittâ dorsali argenteâ et operculo toto squamato.

AMPHIPRION FUSCIVENTER. *Amph. niger, ventre parum pallidiori; fasciâ angustâ operculari, alterâ laterali mediâ, tertiâque obsoletâ caudali albis; pinnâ caudali posticè pinnarumque dorsalis analisque parte molli albo fimbriatis; pinnis ventralibus internè dimidiatim flavis.*

D. $\frac{10}{15}$. A. $\frac{2}{12}$ &c.

Amph. chrysogastri, Cuv. & Val., simillimus. Differt ventre, pinnis pectoralibus, ventraliumque dimidio externo corpori concoloribus.

OBS. In *Amph. chrysogastre* radii spinosi pinnæ dorsalis variant 10 vel 11.

Fam. MUGILIDÆ.

Genus AGONOSTOMUS.

Rostrum subproductum.

Os inferum.

Dentes in utrâque maxillâ minimi, acuti, pluriseriati.

Maxilla inferior rotundata.

Genus *Mugili*, Linn., maximè affine. Formâ et pinnis simillimum. Differt tantummodo figurâ et situ oris, dentibusque pluriseriatis.

AGONOSTOMUS TELFAIRII. *Ag. suprà nigrescens, infrà fusco-argenteus.*

D. 4, $\frac{1}{8}$. A. $\frac{2}{9}$. P. 14.

ATHERINA AFFINIS. *Ath. pinnis pectoralibus caudalique apicem versus nigro irroratis.*

D. 5, 11. A. 15.

Affinis, ut videtur, *Ath. Neso-Gallicæ*, Cuv. Differt numero radiorum a figurâ Cepedianâ.

GOBIUS COALITUS. *Gob. pinnis dorsalibus subcontinuis, 2dâ priore paullo altiore: brunneus, nigrescenti maculatus cæruleoque punctatus, punctis ventralibus caudalibusque longitudinaliter seriatis; pinnis cinereis, radiis nigrescenti punctatis.*

D. 6, 10. A. 8. P. 16.

Gob. Giuri, Ham., ut videtur, affinis.

ELEOTRIS MAURITIANUS. *El. niger; pinnâ caudali rotundatâ; dorsali 2dâ priore altiore.*

D. 6, 9. A. 9. P. 14.

An verè distinctus ab *El. nigricante*, Quoy et Gaim.? Membrana branchiostega maxima, infra operculum longè latèque producta, membranæ lateris oppositi marginem internum tegente.

LABRUS AXILLARIS. *Labr. rostro subproducto; pinnæ dorsalis (per partem spinosam) membranâ profundè excisâ; pinnâ caudali rotundatâ: anticè et ad dorsum brunneus, infrà posticèque pallidè fuscus; maculâ rotundâ ad basin pinnarum pectoralium, secundâ irregulari ad initium pinnæ dorsalis, tertiâ ad apicem radiorum quatuor priorum mollium ejusdem pinnæ, quartâque ad apicem radiorum sex priorum mollium pinnæ analis atris; hâc (pinnâ) præterea pinnisque ventralibus nigrescenti guttatis; caudali pectoralibusque flavescentibus immaculatis, illâ nigrescenti supernè infernèque marginatâ: dentibus quatuor anterioribus in utrâque maxillâ majoribus, alteroque magno ad commissuram utrinque.*

D. $\frac{12}{10}$. A. $\frac{3}{12}$.

Formâ, incisurâ membranæ pinnæ dorsalis, numero radiorum, dentibusque *Labr. Dianam*, LaCép., refert: coloribus omnino differt.

LABRUS LEUCOSTICTICUS. *Labr. pinnâ caudali sublunatâ: aurantiacus?; maculis dorsalibus parvis albis utrinque quatuor; axillâ punctisque numerosis subseriatis humeralibus nigris.*

D. $\frac{12}{19}$. A. $\frac{3}{12}$.

Præcedenti affinis; cui similis formâ (præter caudalis pinnæ), dentibus, numero radiorum, &c.

Cheilinus punctatus. *Cheil. fuscus, anticè virescens; capite supernè rubro lituratim vario; genis pectoreque fulvo-guttatis; corpore miniaceo lineatim punctato; pinnis pectoralibus rotundatis flavidis, axillis miniaceis; dorsali fuscâ, purpureo sparsim punctatâ, ad marginem, posticèque latè, rubrâ, vittâ intra marginem punctisque plurimis cœruleis; ventralibus elongatis purpureis; anali saturatè miniaceâ, intra marginem cœruleo vittatâ; caudali rotundatâ versus apicem rubrâ ibique ocellis minutioribus cœruleis numerosis ornatâ: dentibus viridibus, duobus intermediis maxillæ inferioris unoque laterali anticè utrinque maxillæ superioris maximis.*

D. $\frac{10}{9}$. A. $\frac{3}{8}$. P. 11. C. 11.

Affinis, ut videtur, *Cheil. lunulato*, Cuv., (*Labrus lunulatus*, Forsk.). Differt egregiè coloribus.

Var. Pinnis anali caudali parteque dorsalis molli posticè viridibus. Picturâ *Sparo chloruro*, Bl. haud absimilis; sed forma pinnæ caudalis maximè diversa.

Cheilinus Commersonii. *Cheil. pinnâ caudali rotundatâ: fuscescenti-brunneus; pinnis anali caudali dorsalisque parte molli viridibus; capite ponc et ante oculos vittato; operculo præoperculoque castaneo obliquè lineatis; dentibus duobus anterioribus in utrâque maxillâ maximis, maxillæ superioris exterioribus.*

D. $\frac{9}{10}$. A. $\frac{3}{8}$.

Maximè affinis videtur *Cheil. Digrammæ*, Cuv., (*Labrus Digramma*, LaCép.): Differt præcipuè numero radiorum.

Julis scapularis. *Julis pinnâ caudali rotundatâ: capitis rivulis, corporis lunulis, tæniâ pectorali pone pinnas obliquè ad ventrem ductâ, vittâque pinnæ analis roseis; pinnis dorsali caudalique roseis, hâc cœruleâ transversim rivulatâ, illâ lunulis baseos, vittâ mediâ, apiceque partis mollis cœruleis; pinnâ pectorali hyalinâ, ad basin flavâ; vittâ latâ humerali, ad apicem pinnæ pectoralis truncatâ, nigrâ.*

D. $\frac{9}{11}$. A. $\frac{3}{11}$.

Julis bicatenatus. *Julis pinnâ caudali quadratâ: capite dorsoque viridibus?; lateribus rubris, tæniis utrinque duabus e serie macularum grisearum oblongarum transversalium constantibus ornatis; pinnis dorsali analique flavo ad apicem latè vittatis; caudalis apice flavo; pectorali nigrâ, maculâ magnâ basali marginem inferiorem attingente aurantiacâ; ventralibus flavidis.*

D. $\frac{8}{13}$. A. $\frac{2}{11}$.

Crenilabrus Anthioïdes. *Cren. capite brevi, fronte subdeclivi; pinnâ caudali hirundinaceâ: capite nigro; corpore aurantiaco; caudâ flavâ, suprà infràque vittâ latâ nigrâ per caudalis pinnæ margines excurrente notatâ; pinnâ dorsali maculâ anticâ plagâque latâ posticâ partis spinosæ anticâque partis mollis nigris insignitâ.*

D. $\frac{12}{10}$. A. $\frac{3}{12}$.

Cyprinus Mauritianus. *Cypr. ore haud barbato; pinnâ caudali lunatâ; anali breviore; corpore subalto, subcompresso; squamis* *majoribus: suprà plumbeus, infrà argenteus; pinnis, præsertim versus apices, nigricantibus.*

D. $\frac{2}{17}$. A. $\frac{2}{5}$. C. 19. P. 19. V. 9.

Clupea delicatula. *Clup. elongata, lata; pinnâ dorsali in equilibrio positâ; ventralibus sub basin posticam dorsalis.*

D. 11. A. 9.

Numero radiorum parvo a congeneribus differt. Corporis longitudo in specimine parvo (3-poll.) sextuplo altitudinem superat.

Engraulis Neso-Gallicus. *Engr. elongatus, compressus, ventre serrato: suprà plumbeus, infrà et ad latera argenteus.*

D. 14. A. 32. V. 7. P. 14.

Belone platyura. *Bel. dorso subplano; caudâ depressâ, (altitudine latitudinis dimidio subæquali); pinnâ caudali bifurcâ; pinnis dorsali analique subelongatis, anticè falcatis, anali longiore: suprà plumbeo-virescens, infrà dimidiatim argenteo-flavicans.*

D. 14. A. 18. P. 12.

Long. rictûs, 4 poll.; a rictu ad orbitam, 4 lin.; orbitæ, 8 lin.; operculi, 1 poll.; pinnæ pectoralis, 1 poll. 5 lin.; pinnæ dorsalis, 1 poll. 9 lin.; alt. ejusdem pinnæ, 1 poll.; long. pinnæ analis, 2 poll. 2 lin.; alt. ejusdem, 1 poll. 2 lin.; long. tot. 20 poll.

Rhombus parvimanus. *Rhomb. oculis sinistris parum distantibus, interstitio excavato: fusco nigrescentique marmoratim varius, guttisque pallidis parvis adspersus.*

P. 10.

Formâ et picturâ *Rhomb. mancum*, Cuv., (*Pleuronectes mancus*, Brouss.,) refert, sed os inerme oculique approximati.

Conger flavipinnatus. *Cong. dentibus maxillæ superioris anterioribus tantùm, vomeris ossiumque palatinorum minimis in areis tribus latis asperis dispositis; pinnâ dorsali suprà medium pectoralium incipiente; lineâ laterali conspicuâ, impressâ: pinnis omnibus flavis, anali posticè dorsalique nigro marginatis, hâc insuper ad basin fuscescente.*

P. 15.

Muræna fimbriata. *Mur. dentibus maxillaribus acutis uni-seriatis, anterioribus longioribus; vomerinis anticis duobus elongatis acutis: castaneus; nigro subseriatim crebrè guttatus, pinnarum guttis aliquando in fascias confluentibus; pinnis flavo fimbriatis.*

Balistes auromarginatus. *Bal. ovalis; squamis omnibus, præter capitis dorsique anterioris, tuberculo parvo subspinoso armatis; pinnâ caudali subquadratâ, supernè infernèque paullum productâ: nigrescens, pinnarum dorsalis 2dæ analisque anticè falcatarum marginibus, caudalisque marginibus apice guttâque subbasali, flavis.*

D. 3, 28. A. 25. P. 13. C. 12.

Coloribus *Bal. flavimarginato*, Rupp., similis: differt armaturâ caudæ. Lateribus corporeque toto posticè spinoso-scabris convenit cum *Bal. Willughbeii*, Benn., (*Guaperua longa*, Will., Ichth., tab. I. 20); cui tamen formâ corporis pinnarumque valdè dissimilis.

Balistes Lima. *Bal. ovalis, fuscus; squamis omnibus, præter capitis dorsique anterioris, in medio pallidioribus tuberculatisque; pinnâ caudali subquadratâ, in medio, supernè et infernè paullum*

productâ ; pinnarum dorsalis 2dæ analisque anticè magis elevatarum fimbriâ, caudalisque marginis fasciâ lunatâ, nigrescentibus.
D. 1?, 29. A. 26. P. 13.

Præcedenti valdè affinis; sed pictura alia, pinnæ anticè minùs elevatæ, numerusque radiorum paullo major.

Balistes mitis. *Bal. latè ovalis; pinnâ caudali rotundatâ, extremitatibus paullum productis; seriebus septem vel octo aculeorum caudalium minimorum: pallidè brunneus, pallidiori varius.*
D. 3, 30. A. 28. P. 15. C. 12.

Mr. Bennett availed himself of the opportunity to remark that the *Serranus*, characterized by him from this collection on the 23rd of August, as the *Serr. Telfairii* (p. 127), had been described about the same time by MM. Cuvier and Valenciennes under the name of *Serr. argyro-grammicus*. He also stated, that those eminent zoologists having used as the designation of a distinct genus of *Scombridæ* from that to which he had applied it (p. 146), the classical name *Apolectus*, he proposed, with the view of preventing confusion, to apply to the group indicated by him the name of *Apodontis*.

Mr. Bennett subsequently observed, that the *Birds* described by him (p. 13), had during the summer completed the change of their plumage, and had thereby assumed the full adult characters of the *Angola Vulture* of Pennant, *Vultur Angolensis*, Gmel. The *Polyborus? hypoleucus* sinks therefore into a synonym, and the description of it is that of the *Angola Vulture* in its change from immature to adult plumage.

Mr. Owen read the following additional Notes on the anatomy of *Crocodilus acutus*, Cuv., taken at the dissection of the female of that species, which lately died at the Society's Gardens.

"The same subdivision of the serous membranes, as was noticed in the dissection of the male (p. 139), was again observed; and in addition to those cavities previously described, another distinct one was found between the back part of the liver and *œsophagus*.

"The interior of the stomach did not present the distinct patches observable in the previous dissection (and still obvious in the preparation), which must therefore be considered as an accidental variety: but the lining membrane was a smooth uniform villous surface, stained of a yellow colour, and highly vascular, as is proved by injection of size and vermilion.

"The small intestines presented a dilatation immediately beyond the folds of the *duodenum*; which is most probably a normal structure, and not depending on the accumulation of *flatus*, as was supposed in the dissection of the male.

"The spleen was in the same relative situation, and exhibited the same loose mode of connection, but the process of *peritoneum* was somewhat broader. On holding it up to the light an equally satisfactory view of its contents was obtained; and I am therefore inclined to consider it an *experimentum crucis* on the negative side of the question regarding the duct of the spleen.

"In the *trachea* of this species, we have an additional instance of the resemblance between the structure of the *Crocodile* and that of *Birds*. It is folded on entering the chest like that of the *Demoiselle*, *Ardea Virgo*, Linn., as regards the extent of the loop, which is, however, disposed on a horizontal instead of a vertical plane, inclining first to the left side, then turning towards the right, and ascending for the extent of 3 inches, where it divides; the *bronchiæ* descending to the right of the loop, and separating on a level with the lower part of it to pass to their respective lungs.

"The ovaries formed two thin granular patches, of a gray colour, attached, like the ovary of the *common Fowl*, to the sides of the *vena cava*. The oviducts were of a flattened puckered form, not unlike a tape-worm; they terminated in the genito-urinary cavity."

Mr. Vigors exhibited the sixth and last portion of the species comprising the 'Century of Birds from the Himalayan Mountains,' drawn and lithographed by Mr. and Mrs. Gould, the publication of which was now drawing to a close. Among them were the following species apparently new to science; the first of which exhibited a striking diversity of form among the *Eagles*, which was characterized as follows under the generic name of

HÆMATORNIS.

Rostrum subforte, satis elongatum; *mandibulâ* superiori ad basin rectâ, ad apicem valdè curvatâ; *naribus* ovalibus obliquè in cerâ positis.

Alæ longæ, subrotundatæ; *remige* primâ subbrevi, secundâ tertiâque longioribus, quartâ quintâque ferè æqualibus longissimis, cæteris gradatim decrescentibus.

Pedes subdebiles, subelongati; *tarsis* rugosis squamatim reticulatis; *digitis* subbrevibus, reticulatis; *unguibus* fortibus.

Cauda satis longa, subrotundata.

HÆMATORNIS UNDULATUS. *Hæmat. suprà intensè brunneus, subtùs brunnescenti-rufus; pectore fusco undulatim fasciato; abdomine ocellis albis brunneo circumdatis notato; capite cristato caudâque nigro-brunneis, illius plumis ad basin albis, ad apicem rufescenti marginatis, hâc fasciâ latâ in medio, margineque gracili ad apicem rufescenti albidis, notatâ; regione carpali ocellis albis maculatâ.*

Longitudo 2 ped. 7 unc.

This group was observed to bear a near affinity to the genus *Pandion* in the shape of the bill, wings, and the rugose reticulated scales of the *tarsi*, but to differ from it in the comparative length and weakness of the legs and claws, as well as in having the nails grooved underneath, and not convex, as in the latter group. To this genus belongs the *Falco Bacha*, Lath.* of Africa, and the Manilla bird lately described in the 'Proceedings' of the Committee (page 96) under the name of *Buteo holospilus*. These, from the apparent weakness of their limbs, had hitherto generally been ranked among the *Buzzards*; although from the description of the courageous habits of the *Bacha Falcon*, the only one well known of the group, doubts had been expressed of the propriety of ranking them with that tribe. Mr. Vigors suggested the subfamily of *Eagles* as a more appropriate station for them; where, united by many important characters to *Pandion*, they apparently led off by the length of their *tarsi* to the genus *Limnaëtus* ('Memoirs of Sir S. Raffles,' Append. p. 648.) and others of the long-legged *Eagles*. The three species of the group were exhibited; their general similarity in colour and markings pointed out; and their specific differences explained. These consist chiefly in size, the *Hæmat. holospilus* being one-third smaller than *H. Bacha*; while *H. undulatus* considerably exceeds the latter. The first is spotted all over the body, the second only on the abdomen; while the third is marked by spots on the wing-coverts, and by *ocelli* bearing an undulated appearance on the *abdomen*, the breast also being crossed by undulating *fasciæ*.

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* Mr. Vigors expressed his doubts whether the *Falco Bacha*, Lath., and *Falco Bido*, Horsf., were the same species, although they were generally supposed to be identical. He had not the opportunity of examining a sufficient number of African specimens to determine the point.

MUSCICAPA MELANOPS. Mas. *Musc. unicolor cæsio-cœrulea; regione rictali circumocularique atris; caudâ subtùs fusco-atrâ.*

Fœm. *minùs intensè colorata; viridisque magis quàm cœrulea.*

Species *Musc. Indigo*, Horsf. simillima, ejusdemque staturæ: differt colore magis intenso, notâque capitis atrâ.

TURDUS ERYTHROGASTER. Mas. *Turd. grisescenti-cœruleus; genis, colli lateribus, remigibusque atris; pectore, abdomine, crissoque rufis.*

Fœm. *Cinerascenti-brunnea, dorso imo obscurè fusco fasciato; collo in fronte albescenti, fusco-brunneo notato; pectore, abdomine, crissoque rufescenti-albo undulatim notatis.*

Statura *Turdi saxatilis*, Linn.

CINCLOSOMA ERYTHROCEPHALUM. *Cinclos. suprà cineraceum, subtùs pallidius, colore rubro leviter tinctum; nuchâ maculis atris semilunaribus grandibus, pectore gracilioribus notatis; gulâ notisque auricularibus nigris; capite notâque alarum castaneo-rufis.*

Longitudo 9½ unc.

MYOPHONUS TEMMINCKII. *Myoph. ater, azureo nitens, corporis in fronte plumis in medio metallicè splendentibus; abdomine fusco-atro; capite suprà in fronte regioneque carpali alarum lazulinis; tectricibus alarum parcè cæsio-albo maculatis; rostro flavo.*

Statura *Myoph. flavirostris* (*metallici*, Temm.), cui simillimus: differt rostro graciliori, colore splendidiore corporis caudæque, capitisque vertice lazulino.

A species belonging apparently to the family of *Merulidæ*, and to that portion of it which, from their long legs and short wings and tails, indicate their station to be on the ground, afforded an opportunity of characterizing a form which seems hitherto to have been unnoticed. The length, strength, and arcuated *culmen* of the bill, and the length and strength of the *hallux*, formed the most distinguishing points of modification.

ZOOTHERA*.

Rostrum forte, elongatum, subcurvatum, subcompressum, culmine elevato; *mandibulâ* superiori subemarginatâ, dente subapicali vix decernendâ; *naribus* ovalibus, lateralibus; *rictu* vibrissis rigidis munito.

Alæ subbreves, subrotundatæ; *remigibus* primâ brevi, secundâ multo longiore, tertiâ quartâ quintâque ferè æqualibus longissimis, sextâ his breviori at primâ longiori, cæteris gradatim decrescentibus.

Pedes subelongati, subfortes, *acrotarsiis* integris; *digitis* anterioribus subfortibus, externis ad basin membranâ connexis, internis liberis, medio longissimo; *halluce* elongato fortissimo, ungue forti elongato.

Cauda subbrevis, æqualis; *rectricibus* duodecim.

ZOOTHERA MONTICOLA. *Zooth. saturatè brunnea; colli in fronte notâ longitudinali, pectoris notis parcis, abdomineque albis, hoc brunneo squamatim notato; femorum tectricibus, crissoque fuscis, hoc albo maculato.*

Longitudo *corporis*, 11⅓ unc.; *rostri*, 1⅞; *alæ* a carpo ad apicem remigis 4tæ, 6; *tarsi*, 1⅜; *caudæ*, 4.

PETROCINCLA CINCLORHYNCHA. *Petr. genis, dorso, alis caudâque nigris; pectore, abdomine, crisso, uropygioque rufis; capite suprà, jugulo, regioneque carpali alarum cano-lazulinis; maculâ alarum albâ.*

Longitudo 6¾ unc.

This bird was observed to bear an affinity to the family of *Merulidæ* by the strength and Thrushlike form of the bill; and by its general character of form and colour to that portion of it which includes the *Rock Thrushes*; where it was provisionally placed, until more accurate comparison of the species with contiguous groups determined its station. Its bill was more that of the true *Thrush*, than of the *Rock Thrush*. Its colours were those of *Phœnicura*; under which genus it was erroneously ranked by accident on the plate. The bill is too powerful to admit the species among the *Sylviadæ*.

PHŒNICURA FRONTALIS. *Phœn. fusco-atra; abdomine, crisso, uropygio, rectricumque apicibus, duarum mediarum exceptis, rufis; fronte lazulino splendente.*

Longitudo, 5¾ unc.

PICUS NANUS. *Pic. supernè fusco-brunneus, alis caudâque maculis, dorso fasciis albis, notatis; subtùs albescens, fusco-brunneo latè striatus; strigâ superciliari alterâque suboculari albis; capitis fronte verticeque brunneis, occipite nigro, strigâ gracili auriculari coccineâ.*

Longitudo, 4½ unc.

CUCULUS HIMALAYANUS. *Cuc. corpore suprà rufo, fusco fasciato;*

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[*] The group seems to have many characters in common with *Pomatorhinus*, Horsf. The strong and elevated bill constitutes the chief mark of separation. The alliance between the two groups may serve to indicate the general affinities of the latter genus, whose place in the system has been hitherto undetermined.

subtùs albo, nigro fasciato, pectore rufo tincto; remigibus rectricibusque fuscis, illis externè rufo, internè albo maculatis, his duabus mediis rufo obliquè fasciato, cæteris albo, rufo variegato, maculatis.

Longitudo 11 unc.

CUCULUS SPARVERIOÏDES. *Cuc. corpore suprà brunnescenti-cinereo, capite plumbeo-cinereo; subtùs albo, collo rufo striato, abdomine brunneo fasciato, pectore rufo tincto; remigibus externè leviter rufo maculatis; rectricibus fasciis brunneis latis rufo marginatis quatuor notatis.*

Longitudo 16 unc.

POMATORHINUS ERYTHROGENYS. *Pom. cinerescenti-brunneus, subtùs albescens; fronte, capitis colli abdominisque lateribus, crissoque rufis; caudâ fusco obscurè fasciatâ; rostro pedibusque pallidis.*

Longitudo 11 unc.

VINAGO SPHENURA. *Vin. suprà olivaceo-, subtùs flavo-, viridis; capite in fronte pectoreque aureis; alarum tectricibus, regioneque interscapulari vinaceo-purpureis; caudâ cuneatâ.*

Longitudo 15 unc.

TOTANUS GLOTTOÏDES. *Tot. suprà fuscescenti-griseus, capite colloque fusco striatis, dorso alisque strigis fasciisque fuscis undulatis; fronte corporeque toto subtùs niveis; rectricibus duabus mediis grisescentibus, lateralibus albis; quatuor mediis utrinque, cæteris externè, fusco fasciatis.*

Statura formaque *Tot. glottidis*; differt notis supernis gracilioribus, corporeque subtùs toto niveo, haud notato.

The number of species exhibited at the present and former Meetings, which were considered to have been hitherto undescribed, amounted to sixty. To these were added the following species, which, although previously described, had either remained unfigured, or had not been figured with sufficient accuracy for the present state of science, or which had been figured elsewhere during the progress of the work; viz. *Falco Chicquera*, Daud.; *Otus Bengalensis*, Franklin ('Proceedings,' No. X. p. 115.); *Muscipeta peregrina*, ♂ & ♀; *Cinclosoma leucolophum*; *Pitta brachyura*; *Cinclus Pallasii*, Temm.; *Pica erythrorhyncha*, Wagl.; *Pica vagabunda*, Wagl.; *Pica Sinensis*, Hardw. & Gray; *Buceros cavatus*, Shaw; *Bucco grandis*, Gmel.; *Picus Mahrattensis*, Lath. ♂ & ♀; *Vinago militaris*, Cuv. ♂ & ♀; *Lophophorus Impeyanus*, Cuv. ♂ & ♀; *Tragopan Satyrus*, Cuv.; *Phasianus Pucrasia*, Hardw. & Gray, ♂ & ♀; *Perdix Chucar*, Hardw. & Gray; *Parra Sinensis*, Gmel.; *Vanellus Goensis*; *Anser Indicus*.

The foregoing species completed the series of the Himalayan collection which had originally formed the basis of the 'Century of Birds.' All of these, Mr. Vigors observed, had been most liberally presented by Mr. Gould to the Society, and were deposited in the Museum as authentic types of the species figured in that work. To these species were added a few others from the same locality, which the liberality of their owners allowed to be exhibited to the Committee, and to be made use of for the benefit of science. Among them were the following species, which had been kindly communicated by Dr. Scouler of the Glasgow University.

Enicurus Scouleri. *En. capite, collo, dorso superiori, alis, caudáque atris; fronte, fasciá alarum, dorso imo, abdomine, caudæ basi lateribusque albis; abdomine maculis, dorso imo fasciá, atris notatis.*

Longitudo *corporis*, 5½ unc.; *caudæ*, 2.

Mr. Vigors expressed his pleasure in dedicating this species to an active and liberal friend to science.

Pyrrhula erythrocephala. *Pyrr. capite suprà, nuchá, pectoreque rufis; dorso, scapularibus, gutture, abdomineque imo cinereis; fronte, regione rictali, gulá, remigibus, alarum tectricibus, rectricibusque intensè atris; fasciá alarum, uropygio, crissoque albis.*

Longitudo *corporis*, 6 unc.

Certhia Himalayana. *Certh. suprà brunnea, capitis dorsique plumis in medio albescenti-rufo lineatis, alis fasciam mediam rufam exhibentibus; subtùs albescens; remigibus, rectricibusque pallidiori-brunneis, fasciis fuscis gracilibus frequentibus notatis.*

Statura formaque *Certh. familiaris*, Linn. Differt fasciis confertioribus gracilioribusque alarum rectricumque.

A very striking modification of form was conspicuous in the following bird, which, with the bill and plumage of some of the typical *Wading Birds*, exhibited the tridactyle conformation and general character of the legs of some of the *Charadriadæ*. In the former particulars it approached to *Ibis* and *Numenius;* in the latter to *Hæmatopus*. A knowledge only, it was observed, of its habits and internal construction, at present wanting, could determine with accuracy the exact affinities of the group, which was thus characterized:

Ibidorhyncha.

Rostrum gracile, elongatum, deorsùm curvatum, *Ibidis Numenii*que rostris simile; *naribus* lateralibus, longitudinalibus, membranâ per totam longitudinem clausis.

Corpus gracile, *Grallatorum* typicorum formam exhibens.

Alæ subelongatæ, subgradatæ; *remigibus* secundis et tertiis æqualibus longissimis, primâ paulò breviori, cæteris gradatim decrescentibus.

Pedes mediocres, tridactyli, *Hæmatopodum* pedibus simillimi; *digitis* internis liberis, externis membranâ usque ad pollicem primam connexis, omnibus marginatis; *unguibus* obtusis.

Cauda mediocris, æqualis.

Ibidorhyncha Struthersii. *Ibid. corpore suprà colloque in fronte pallidè griseis; corpore subtùs albo; capitis vertice, facie guttureque nigris albo variegatis; torque pectorali subgracili, ad nucham extendente latiori, uropygioque extremo atris; rectricibus mediis fusco obscurè undulatim fasciatis, prope apicem nigro notatis, lateralium pogoniis externis albis nigro fasciatis.*

Longitudo 14 unc.

This bird was named in honour of Dr. Struthers, a zealous naturalist, who had formed the collection in the Himalayan Mountains, out of which the four preceding species were selected.

In addition to the birds thus kindly placed by Dr. Scouler at the disposal of the Society, for exhibition and description, Mr. Vigors exhibited a species of *Woodpecker* belonging to the three-toed section of that genus, nearly allied to *Picus Tiga*, Horsf., but differing in its greater size, in more intenseness of the scarlet colour on the back and wings, and in being marked by a light gray patch on the throat. The species was discovered in the Himalayan Mountains by the Hon. Frederick J. Shore of the East India Company's civil service, and was kindly forwarded to the Society for exhibition by his brother, the Hon. C. J. Shore. The species was named in honour of the discoverer, whose observations made on the spot on many of the Himalayan birds will form the most valuable part of the letter-press accompanying the forthcoming work on these birds;—it was characterized as follows:

Picus Shorii. *Pic. suprà aurantio-viridis; capite cristato, dorso uropygioque coccineis; subtùs albus; strigâ postoculari, alterâ a rictu extendente, nuchâ, remigibus, rectricibus, notisque squamosis pectoris abdominisque atris; thorace pallidè grisescenti-brunneo.*

Longitudo 12 unc.

A drawing by Mr. Gould of a species in the Liverpool Museum, which was obligingly communicated by Dr. Traill for description, was exhibited, and the bird was characterized as follows:

Pastor Traillii. Mas. *Past. suprà subtùsque brunnescenti-coccineus; capite, collo, alisque nigris.*

Fœm. *suprà brunnea, subtùs albescens, strigis brunneis notata; capite, collo remigibusque nigris; caudâ brunnescenti-coccineâ.*

Longitudo 10¾ unc.

Mr. Vigors observed that this bird appeared to approach nearer to *Pastor* than to any other known group; but that at the same time it exhibited some modifications of that form. As he had however only a drawing of the bird before him, he refrained from any more detailed observations. He expressed his pleasure in having the opportunity of inscribing it to an active and scientific naturalist. He begged here also to refer to a bird which he had characterized at a preceding Meeting (Feb. 8), the description of which had been published in the Committee's 'Proceedings' (No. III. p. 35.), the *Phasianus Staceii.* This bird was to be included in the list of those which had been liberally communicated by other Institutions for the general benefit of science, having been forwarded for exhibition to the Committee by Philip B. Duncan, Esq. Keeper of the Ashmolean Museum in Oxford, where the specimen is deposited; to whom, and to whose equally liberal brother, J. Shute Duncan, Esq., his predecessor in the Museum, every lover of zoology is aware how deeply their science is indebted. The species commemorates the name of Major Stacey of the East India service, who had obtained the bird in the Himalayan range, and had presented it, with several other valuable species, to the Ashmolean Museum.

Mr. Vigors, in closing this subject, called the attention of the Committee to some errors which had occurred in the lettering of the plates on which the foregoing birds had been lithographed. The *Picus auri-*

ceps ('Proceedings,' No. IV. p. 44.) was by some accident named *Picus brunnifrons*, which name, as it had appeared on the plate, he wished to be retained to the species. The *White-crowned Crow* of General Hardwicke, which had been figured in the 'Century,' was erroneously called a *Garrulus*. It seems rather to belong to the tribe of *Dentirostres*, and the genus *Cinclosoma*. Some verbal errors in the lettering were also pointed out; all of which, together with the mistakes in the names, Mr. Vigors attributed to the hurry in which some of the numbers of the work were obliged to be printed off in order to answer the demand that was made for them on the day of the monthly publication. And he concluded by trusting that the supporters of the work, and the lovers of science would overlook these accidental blemishes in the lettering of the plates in the midst of so many superior excellencies.

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